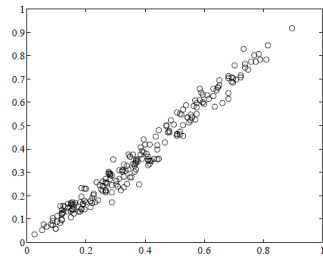
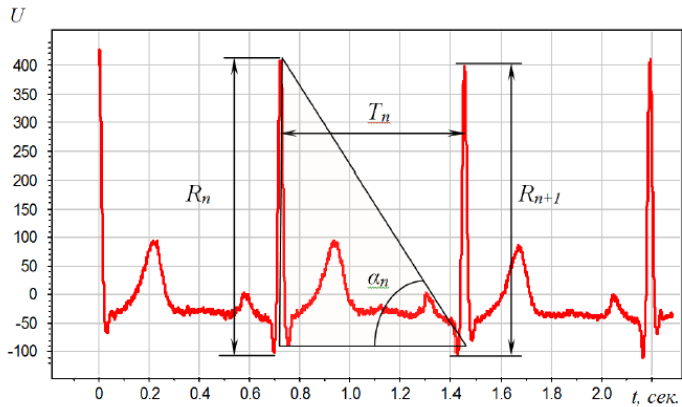
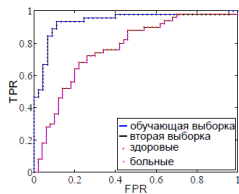
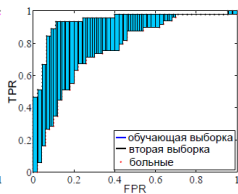
истинные y_i случайно перепутанные y_i

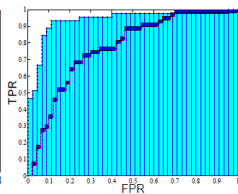




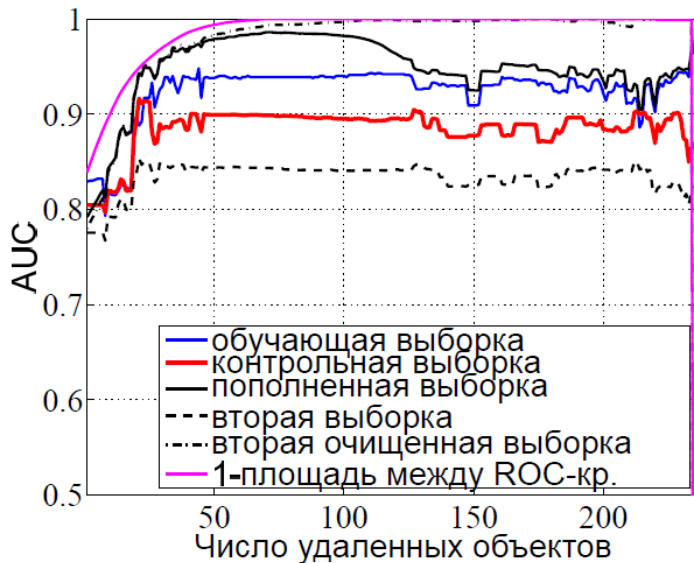
(a)



(b)

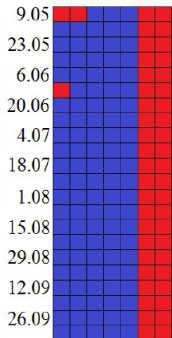


(c)

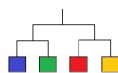
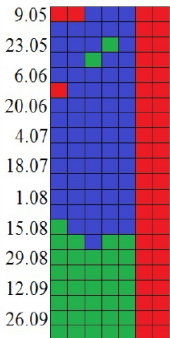




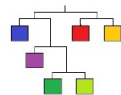
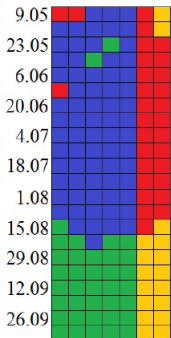
Пн Bc



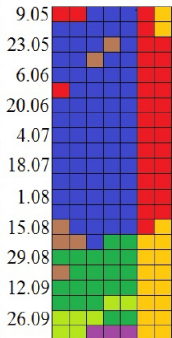
Пн Bc

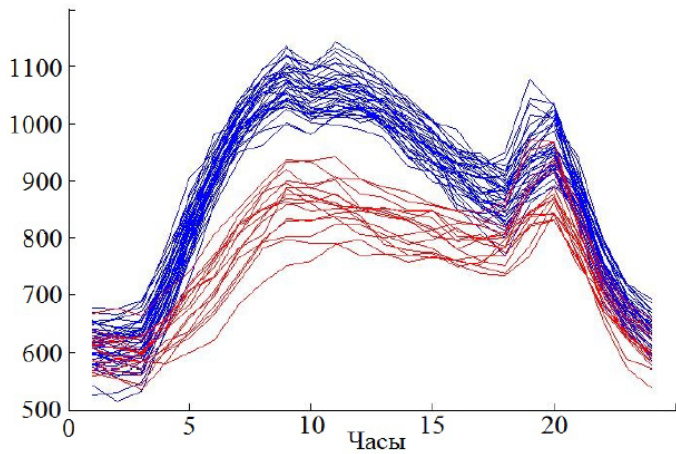


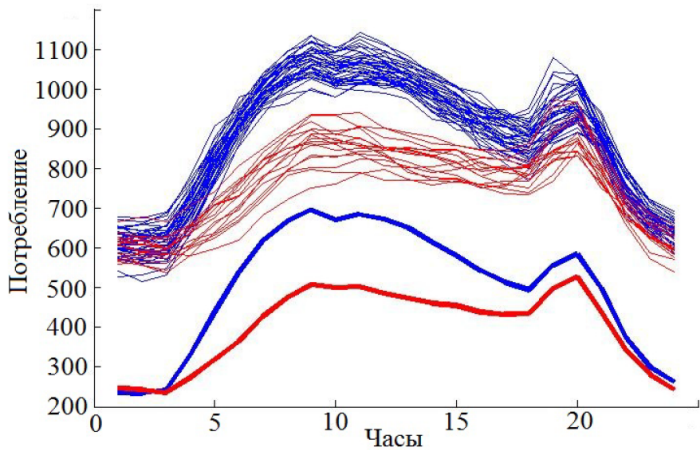
Пн Bc

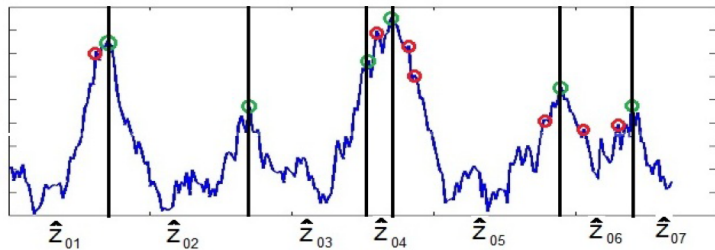


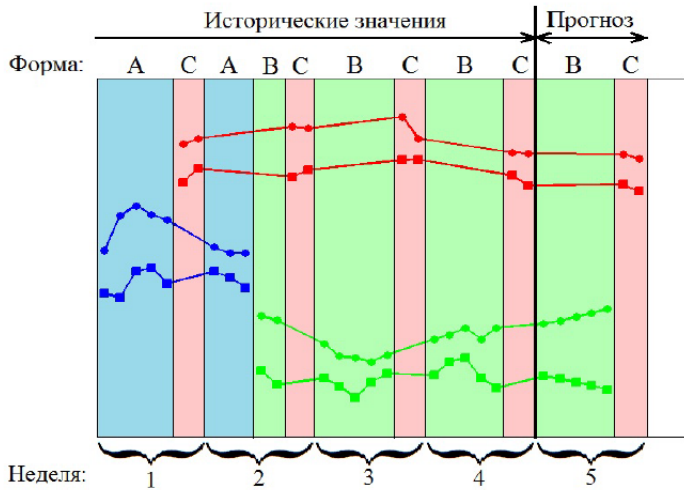
Пн Bc

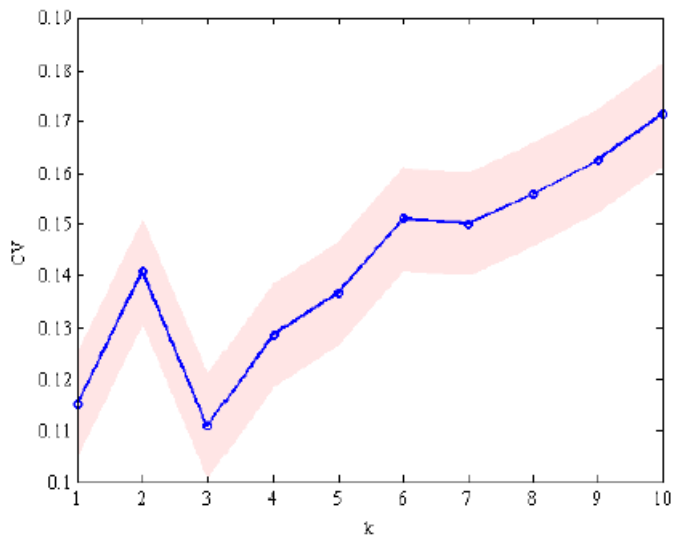


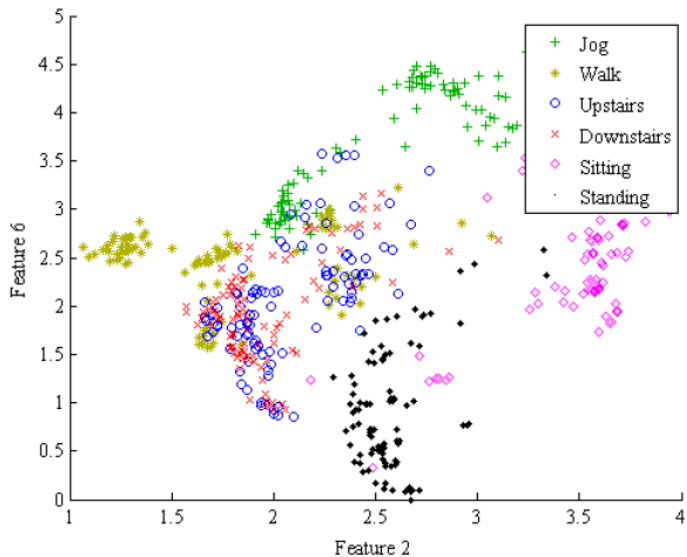


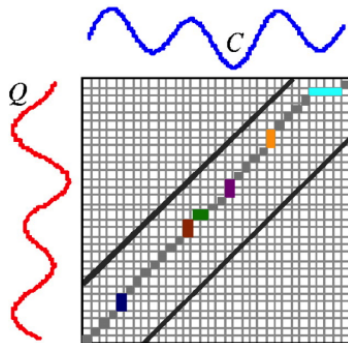
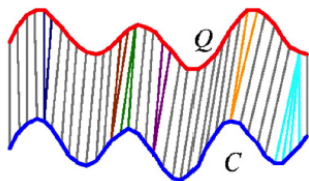
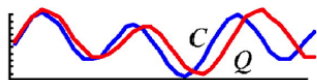


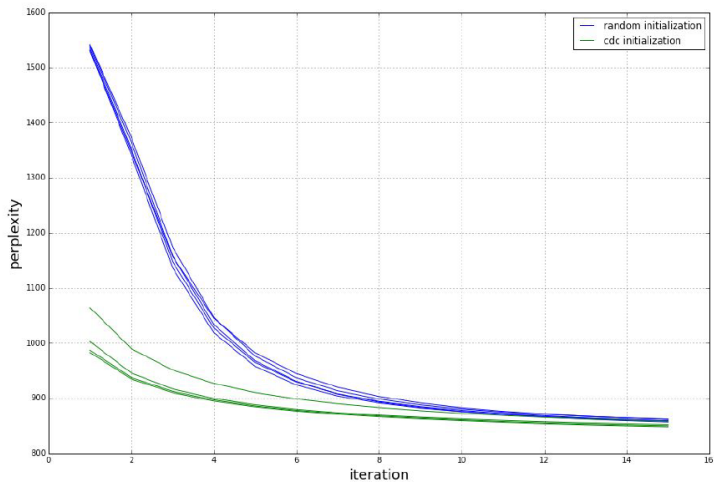


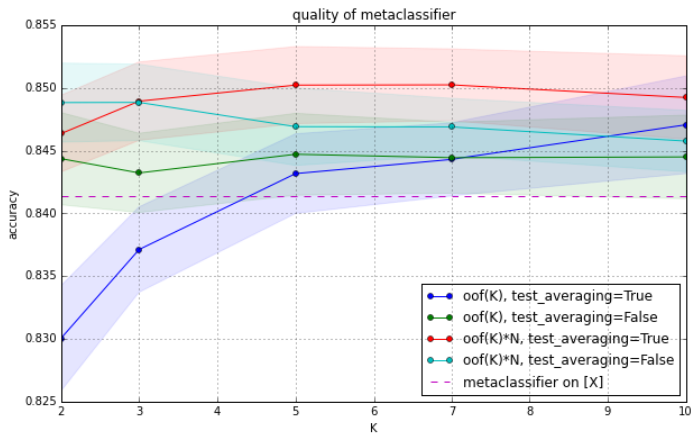


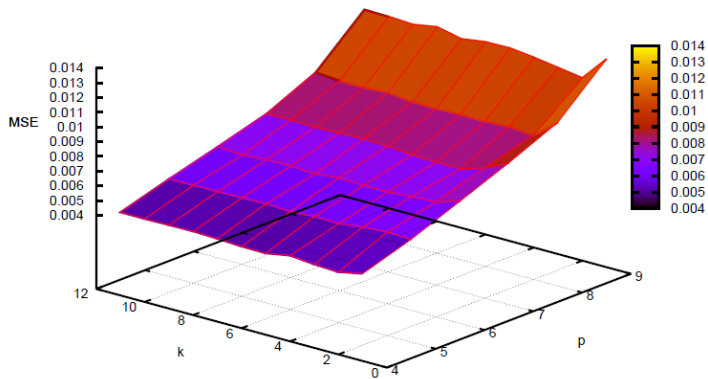


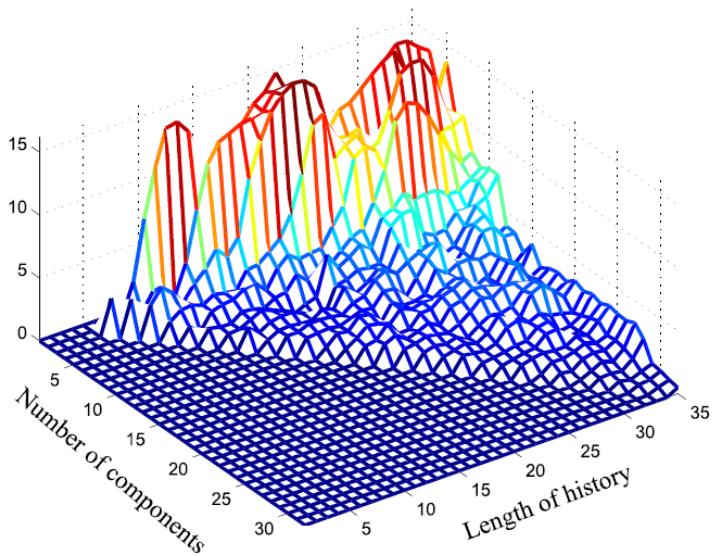


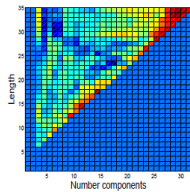
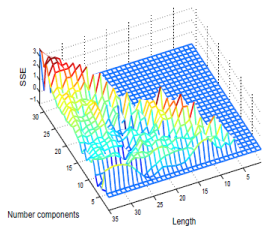


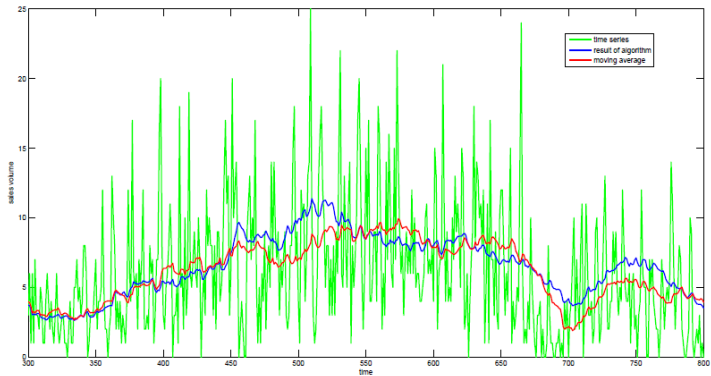


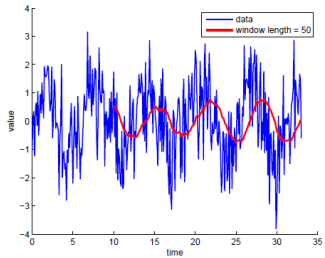
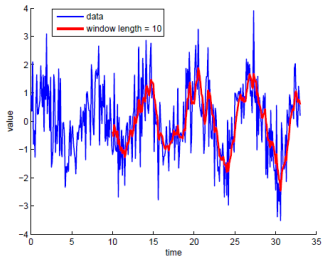


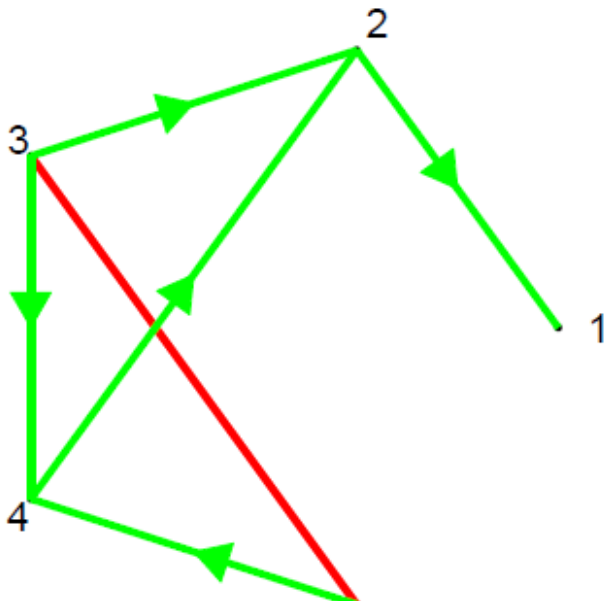


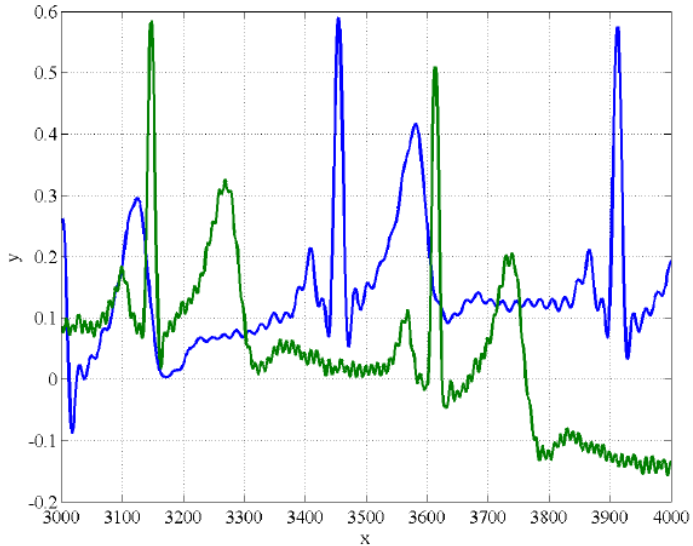


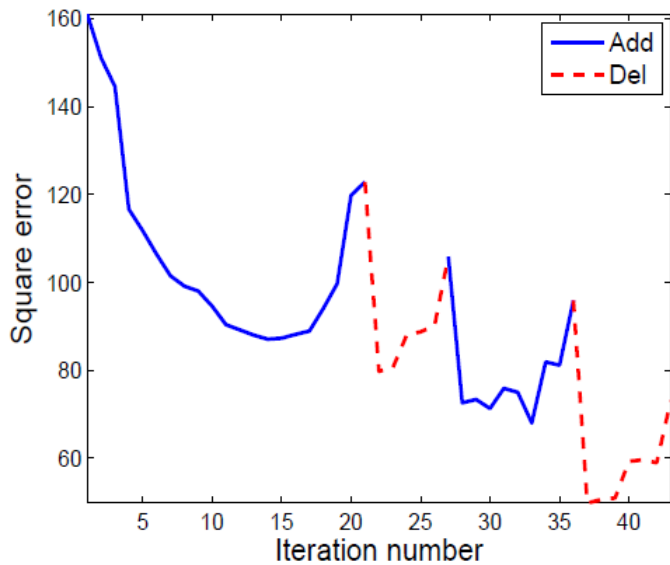


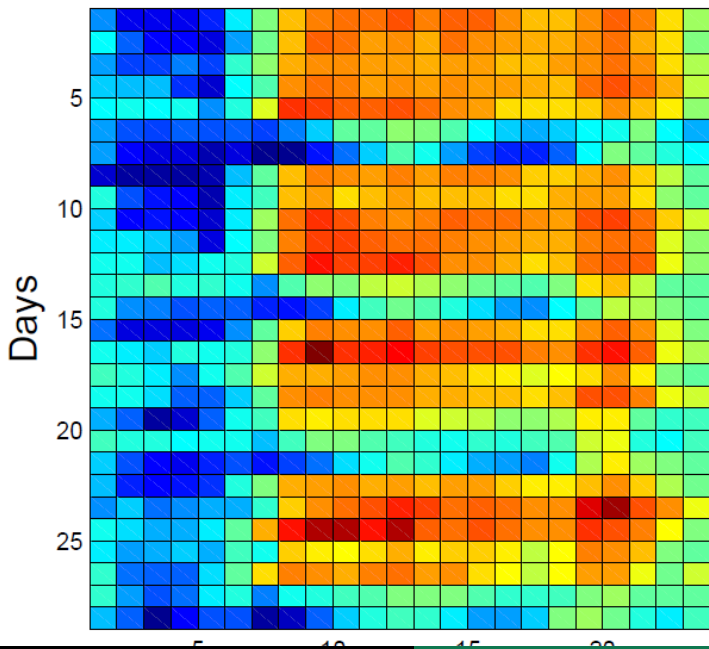


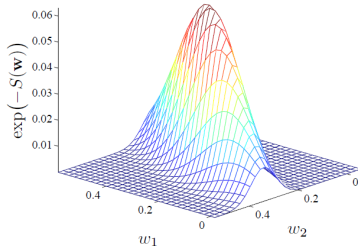
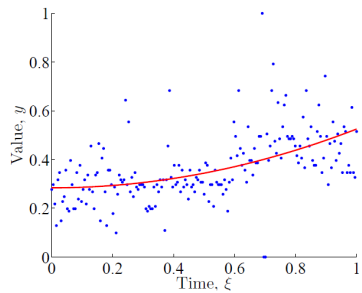


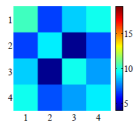
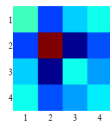
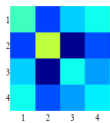
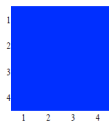


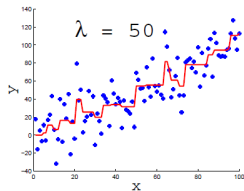
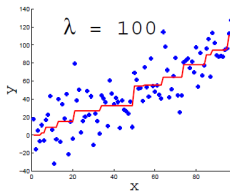
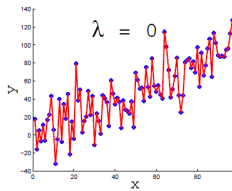


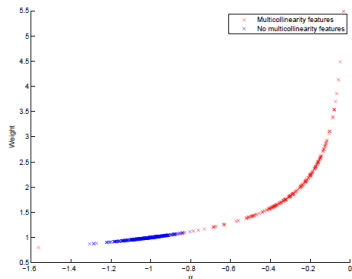
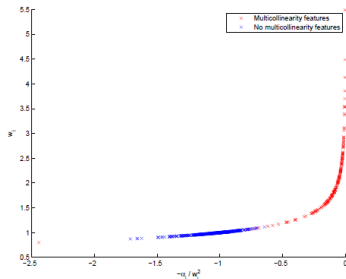


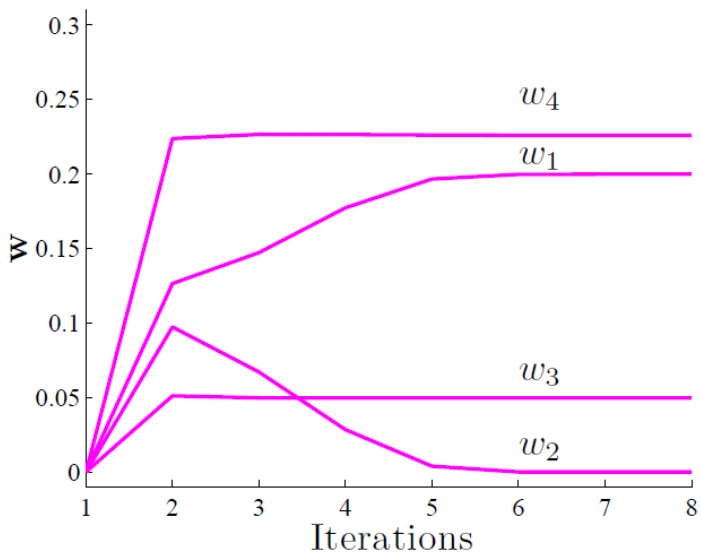


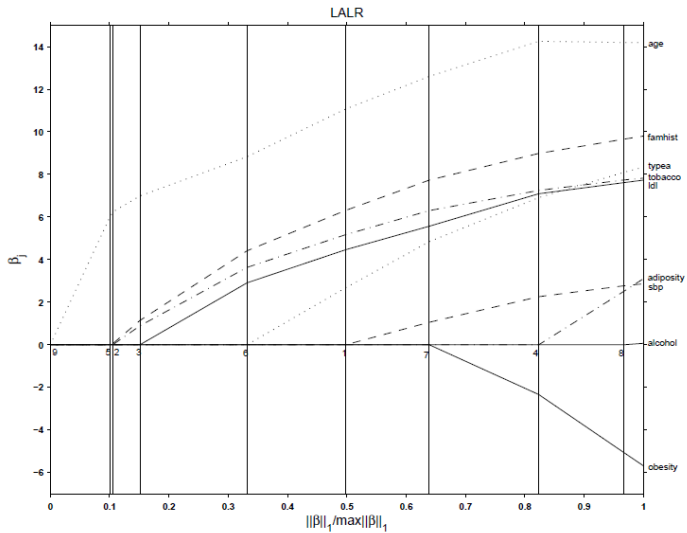


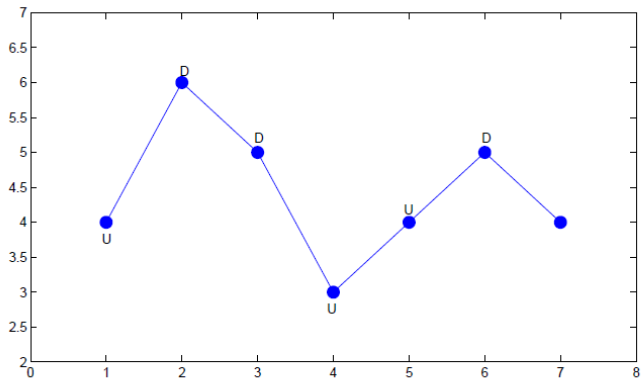


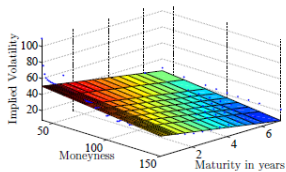
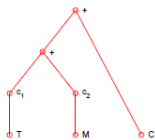


(a) Зависимость w_i от α_i (b) Зависимость w_i от $\frac{\alpha_i}{w_i^2}$

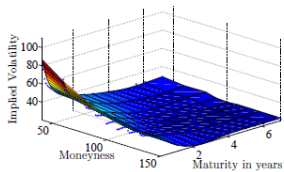
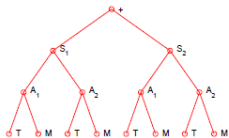




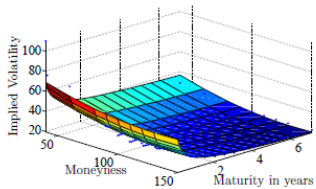
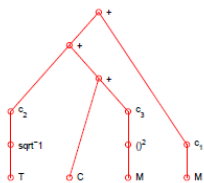




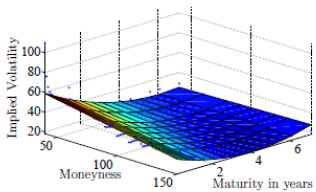
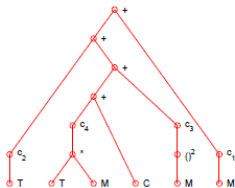
a)



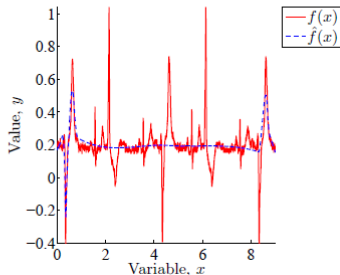
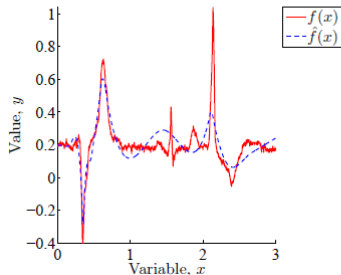
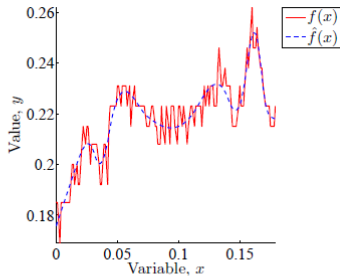
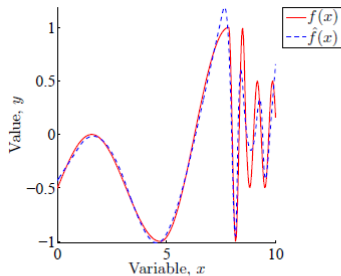
b)

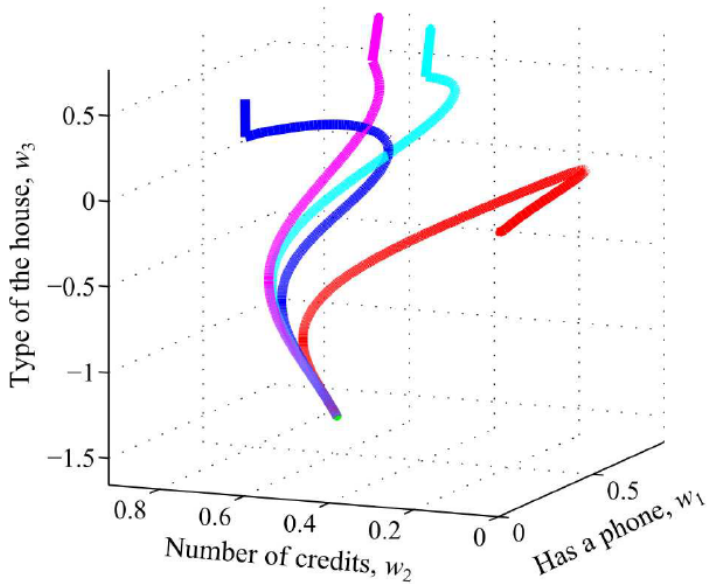


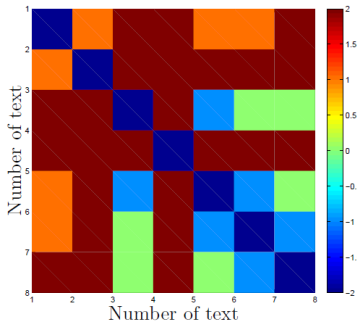
B)



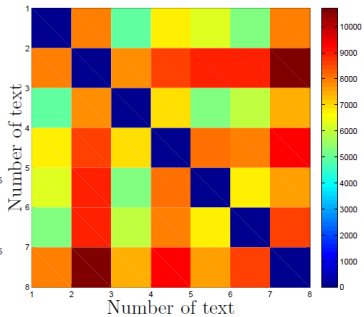
Gamma)

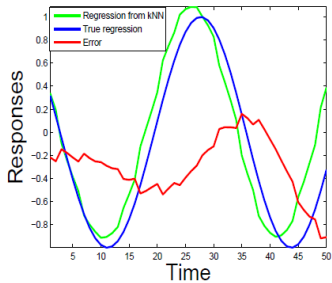
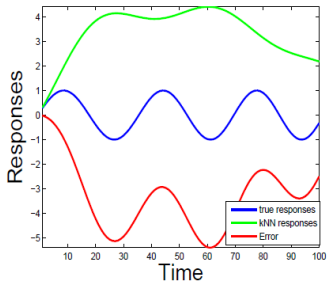


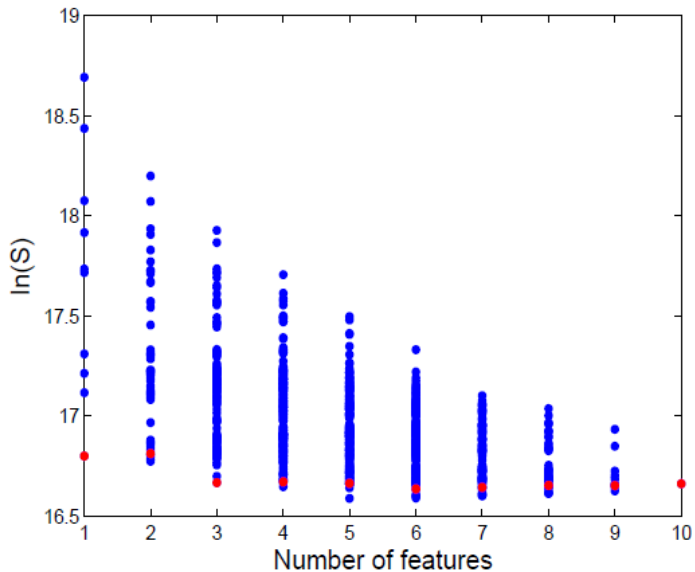


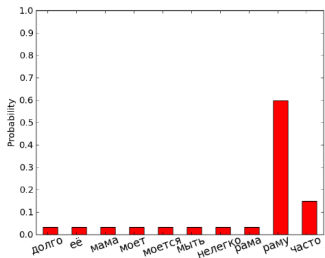
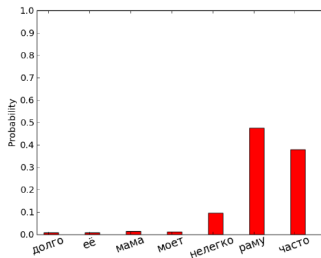


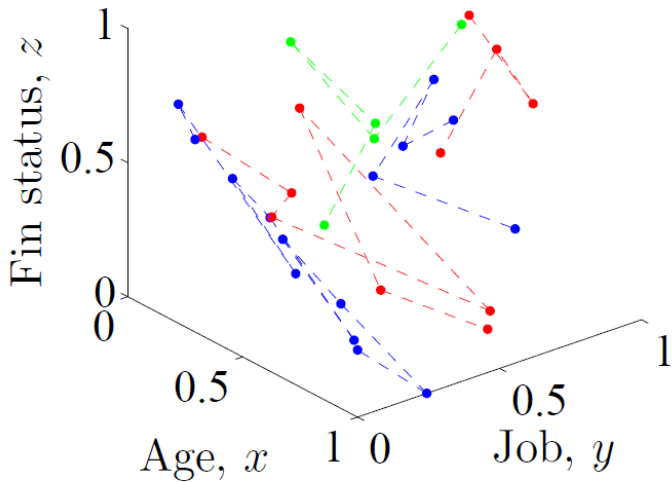
(a) Экспертная матрица расстояний

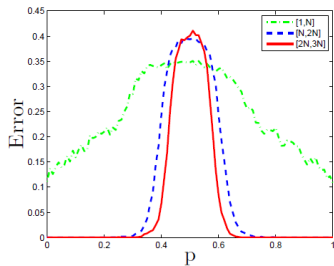
(b) Матрица расстояний между текстами с метрикой ρ_1



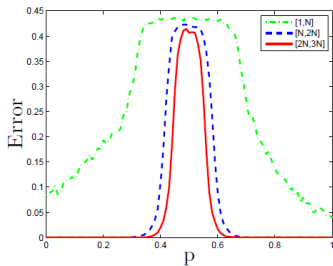


Метод n -граммМетод n -грамм на классах

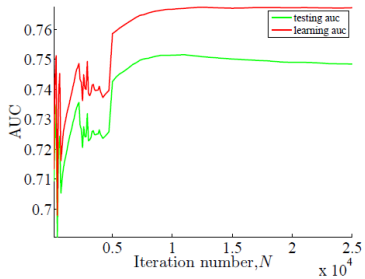




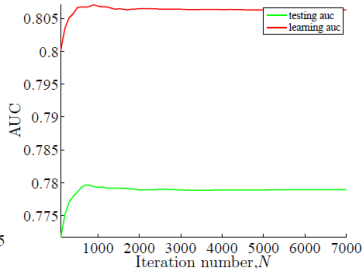
(a) Расстояние городских кварталов



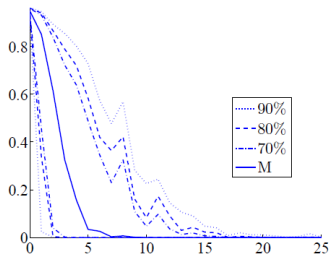
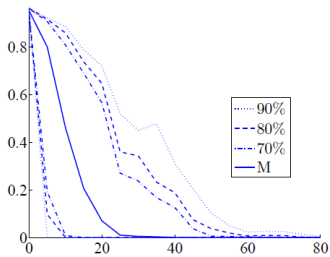
(b) Евклидово расстояние

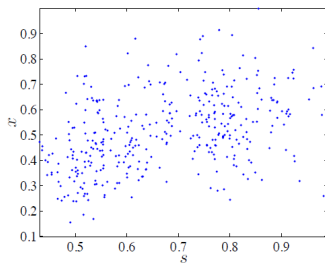
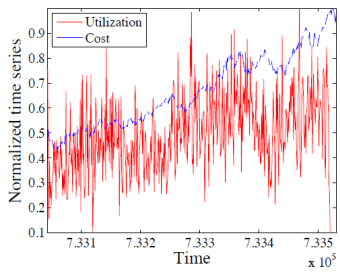


(a) Исходные признаки



(b) Разделенные признаки



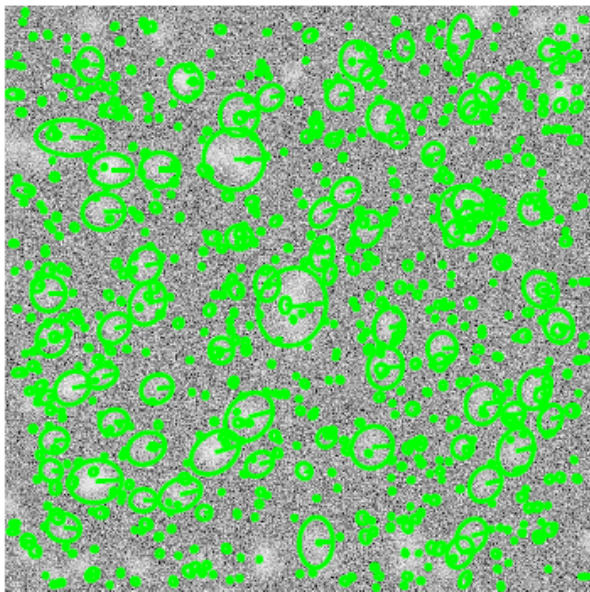


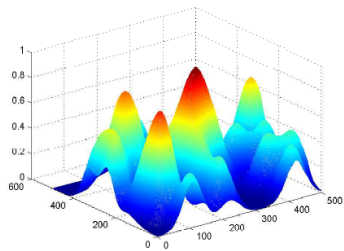


(а) преобразование Хафа

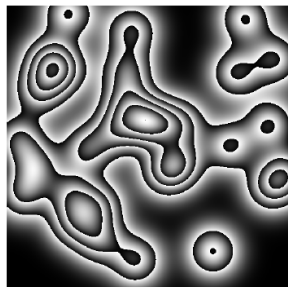


(б) гистограмма расстояний

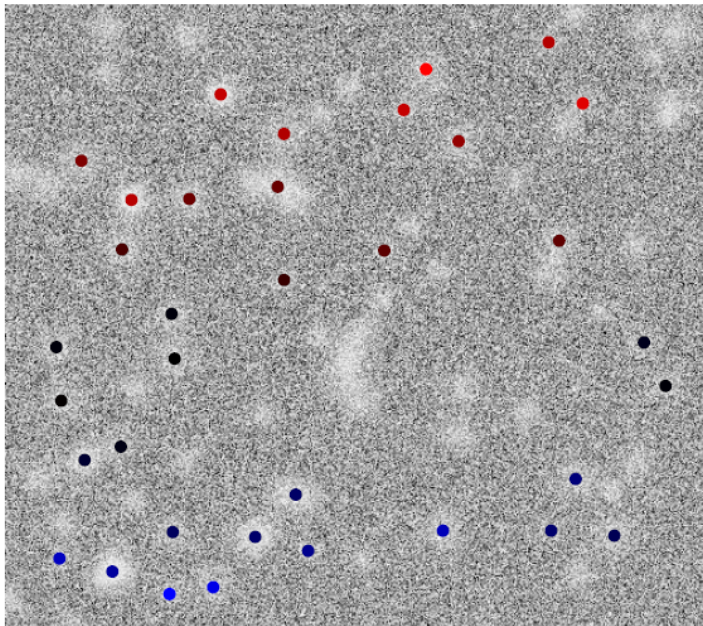


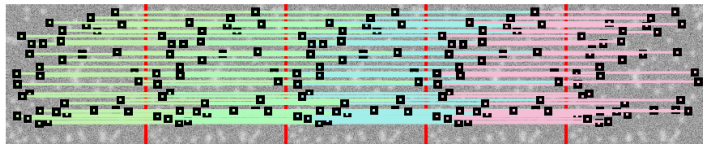


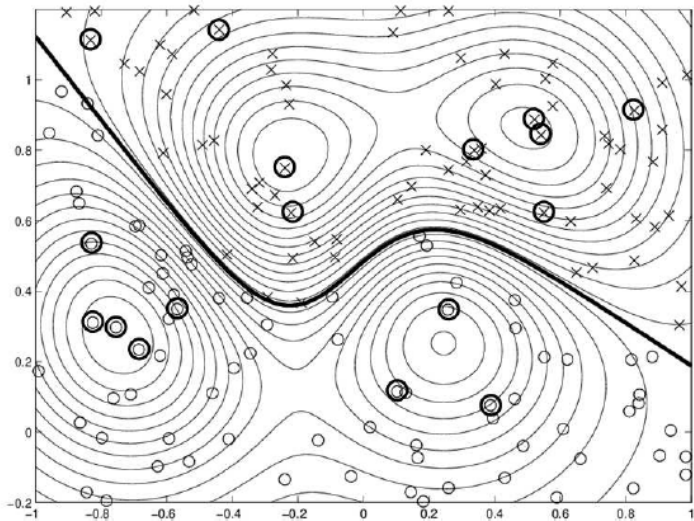
(a) Высота



(б) Фазовая составляющая без учета шума




















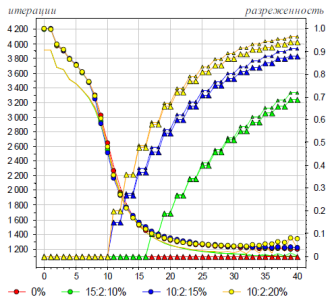




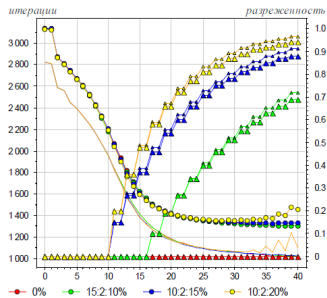
w_1, \dots, w_{n_d} :

Разработан спектрально-аналитический подход к выявлению размытых протяженных повторов в геномных последовательностях. Метод основан на разномасштабном оценивании сходства нуклеотидных последовательностей в пространстве коэффициентов разложения фрагментов кривых GC- и GA-содержания по классическим ортогональным базисам. Найлены условия оптимальной аппроксимации, обеспечивающие автоматическое распознавание повторов различных видов (прямых и инвертированных, а также тандемных) на спектральной матрице сходства. Метод одинаково хорошо работает на разных масштабах данных. Он позволяет выявлять следы сегментных дупликаций и мегасателлитные участки в геноме, районы синтении при сравнении пары геномов. Его можно использовать для детального изучения фрагментов хромосом (поиска размытых участков с умеренной длиной повторяющегося паттерна).

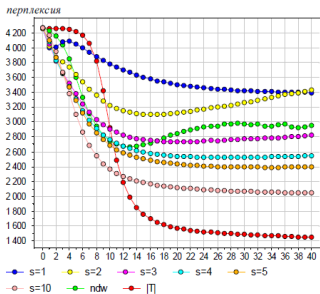
				
signature	$l=1$	$l=3$	$l=5$	$l=7$
				
gesture	$l=1$	$l=3$	$l=5$	$l=7$
				



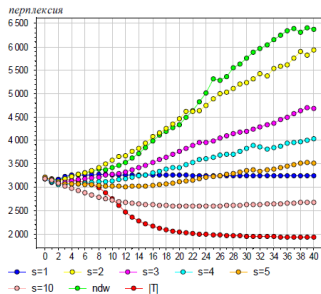
RuDis, разреживание через 2 итерации



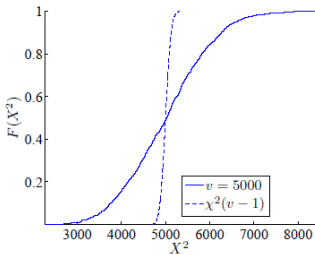
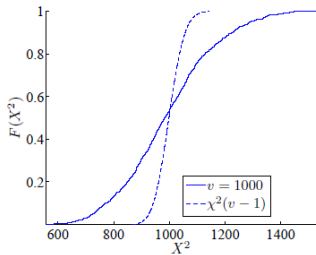
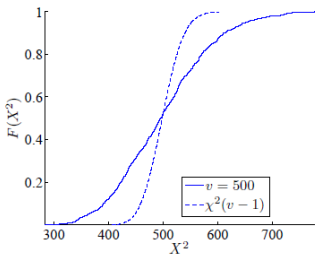
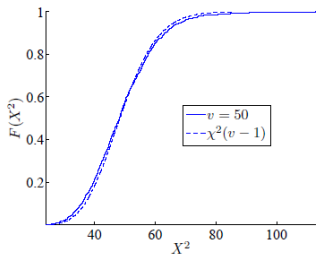
NIPS, разреживание через 2 итерации

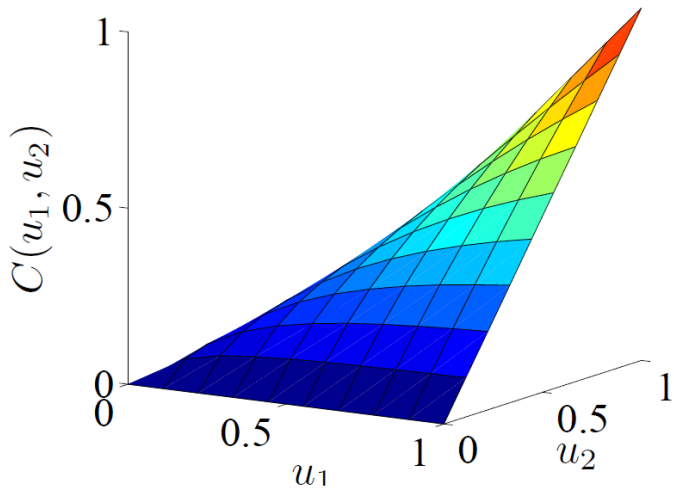


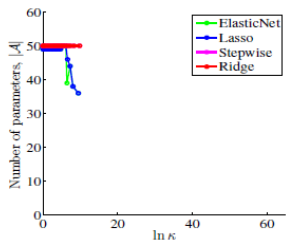
RuDis, разреживание с 1-й итерации



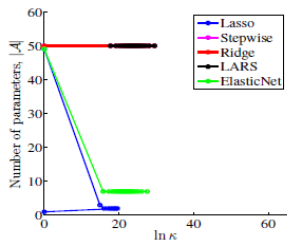
NIPS, разреживание с 1-й итерации



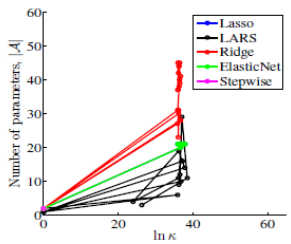




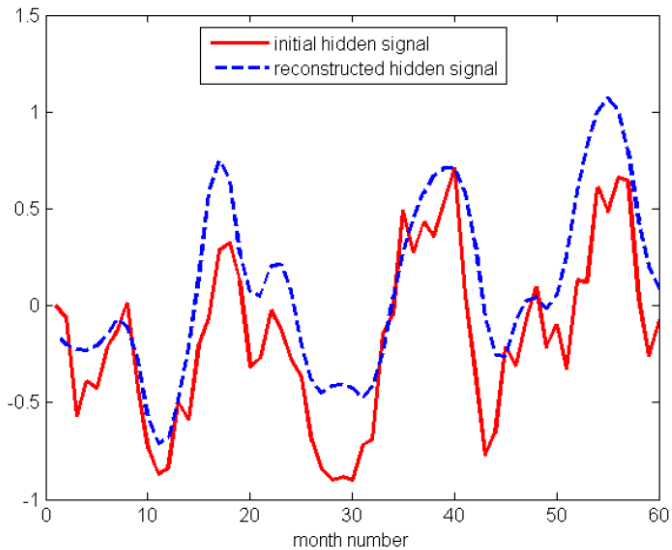
(a) Неадекватная коррелирующая

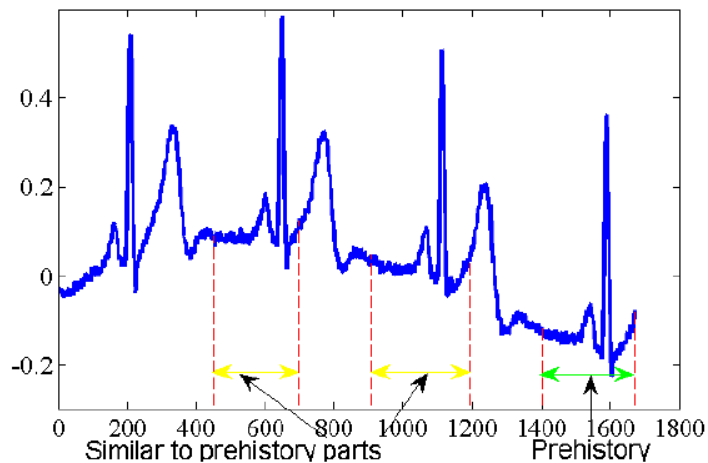


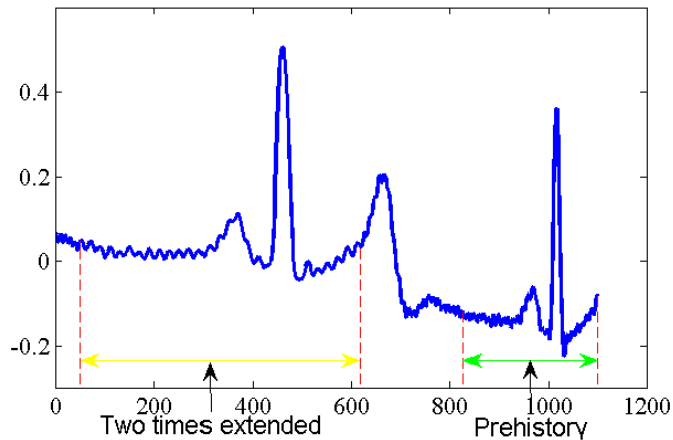
(b) Адекватная избыточная

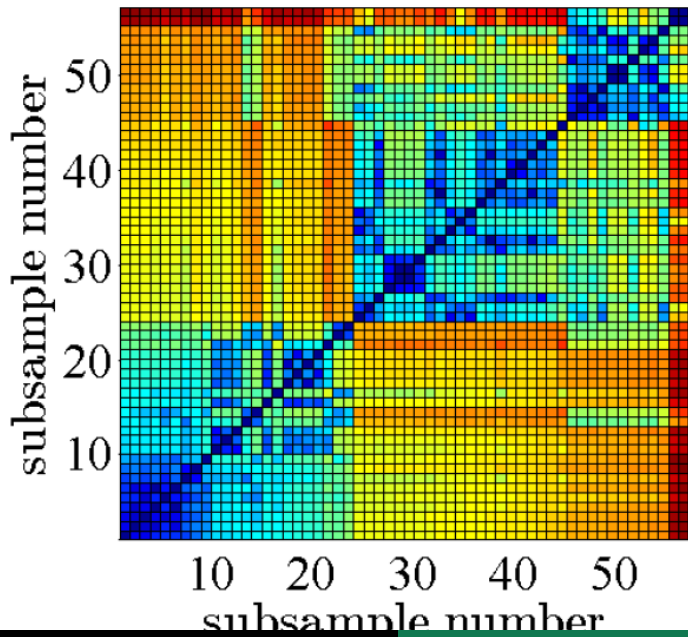


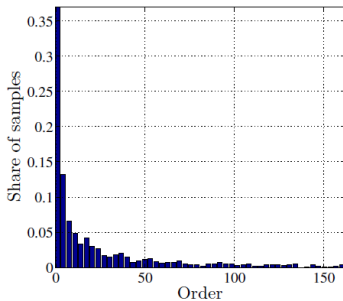
(c) Адекватная коррелирующая



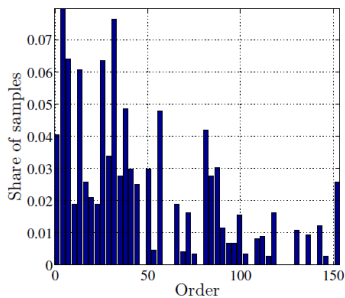




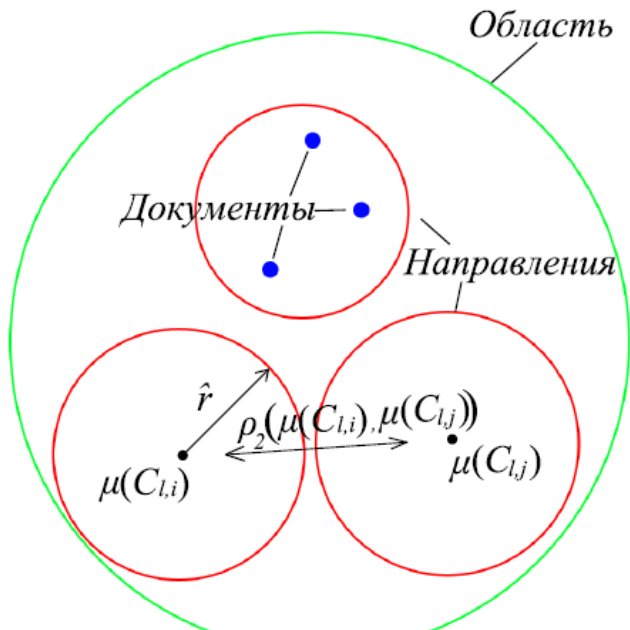


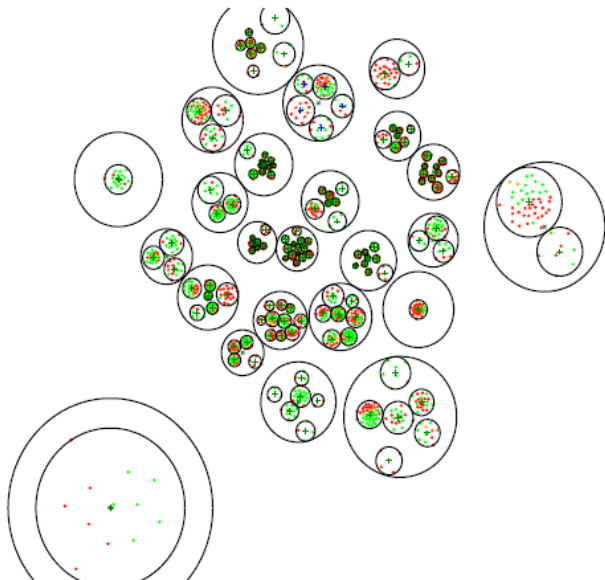


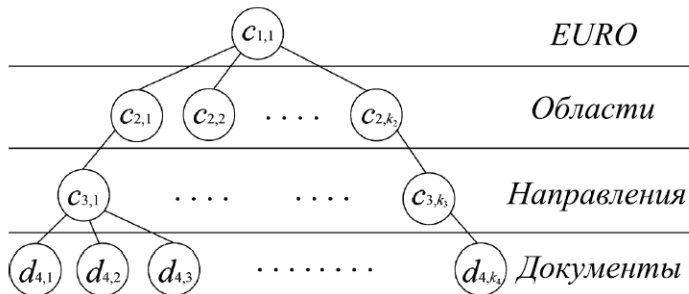
Предложенный оператор
релевантности, $Q = 22.54$

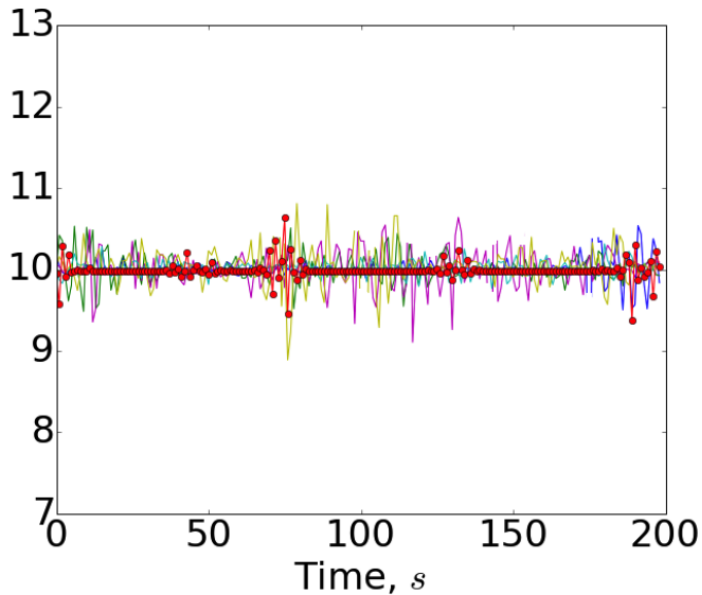


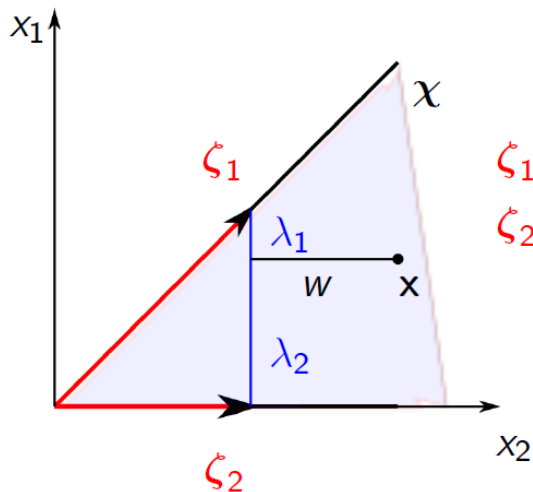
Базовый оператор
релевантности $R_1(\cdot)$, $Q = 46.86$





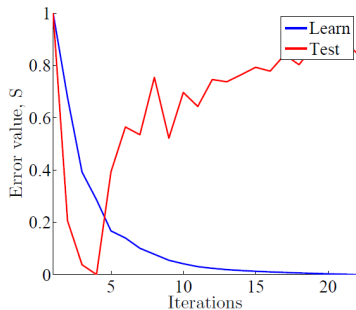




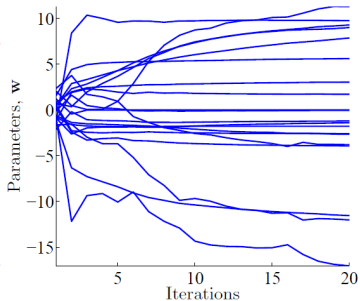


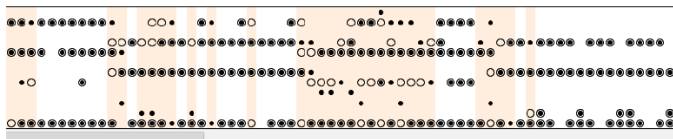
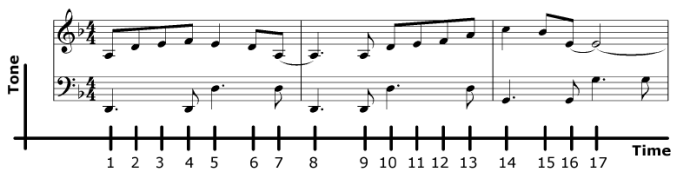
$$\zeta_1 = [1; 1],$$

$$\zeta_2 = [1; 0]$$

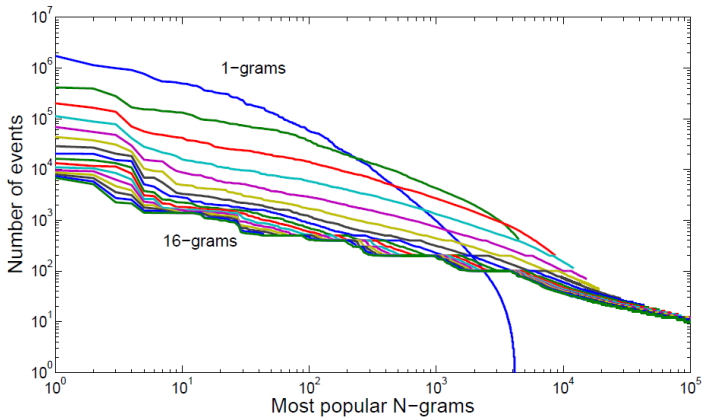


(a) Значение ошибки

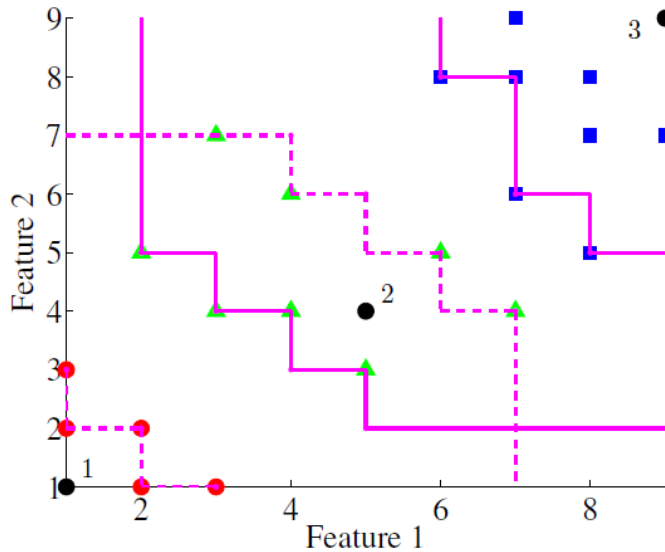
(b) Параметры модели, w

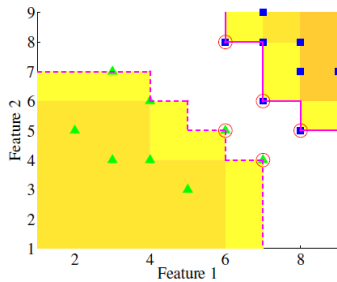
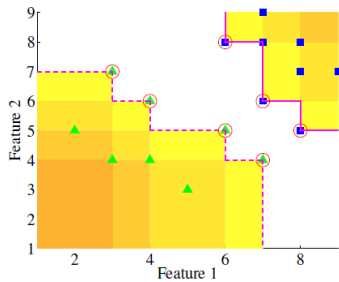


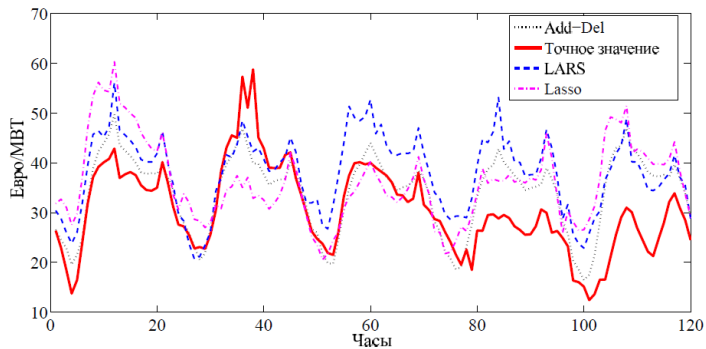
Пустые круги — истинные полутона, точки — предсказанные, ошибки подсвечены, горизонтальная ось — время.



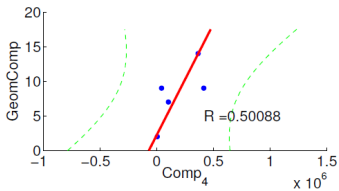
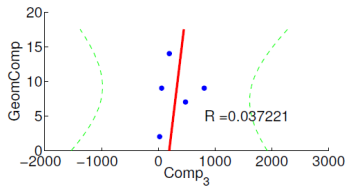
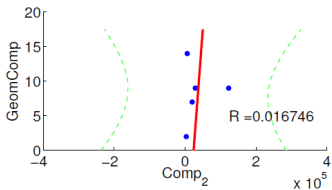
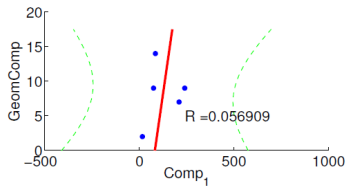
	Признак 1 важнее, чем признак 2	Признак 2 важнее, чем признак 1
$x_{n1} > x_{n2},$ $x_{p1} < x_{p2}$	<p>Scatter plot showing Feature 1 vs Feature 2. The plot is divided into yellow shaded regions. The first region is a square from (0,0) to (4,4). The second region is a square from (5,5) to (9,9). Point x_n is located at (4,3) and point x_p is located at (5,6).</p>	<p>Scatter plot showing Feature 1 vs Feature 2. The plot is divided into yellow shaded regions. The first region is a rectangle from (0,0) to (4,3). The second region is a rectangle from (5,6) to (9,9). Point x_n is located at (4,3) and point x_p is located at (5,6).</p>
$x_{n1} < x_{n2},$ $x_{p1} > x_{p2}$	<p>Scatter plot showing Feature 1 vs Feature 2. The plot is divided into yellow shaded regions. The first region is a rectangle from (0,0) to (3,4). The second region is a square from (5,5) to (9,9). Point x_n is located at (3,4) and point x_p is located at (6,5).</p>	<p>Scatter plot showing Feature 1 vs Feature 2. The plot is divided into yellow shaded regions. The first region is a square from (0,0) to (3,3). The second region is a square from (5,5) to (9,9). Point x_n is located at (3,3) and point x_p is located at (6,5).</p>

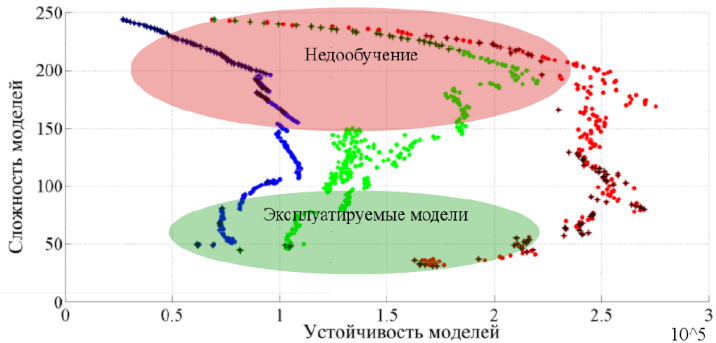


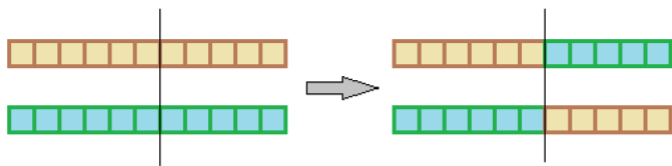




Perekrestenko



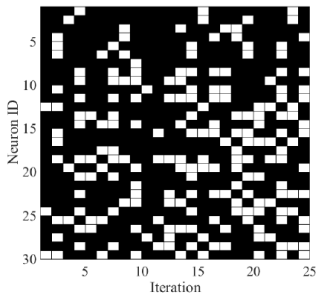




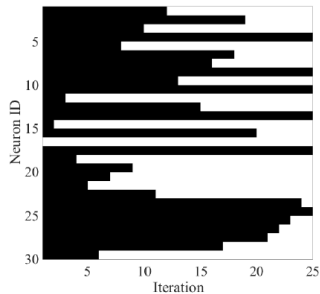
Генетический алгоритм – Скрещивание



Генетический алгоритм – Мутация

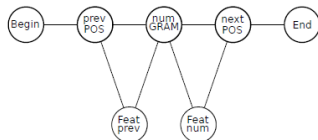


Предложенная стратегия

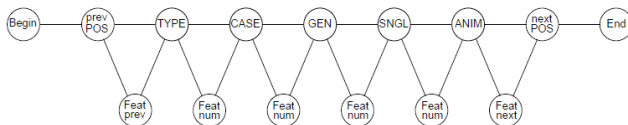


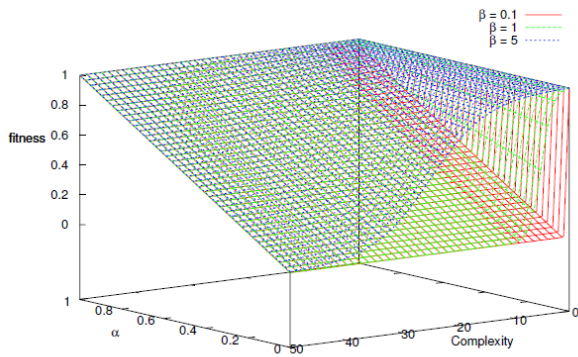
Optimal Brain Damage

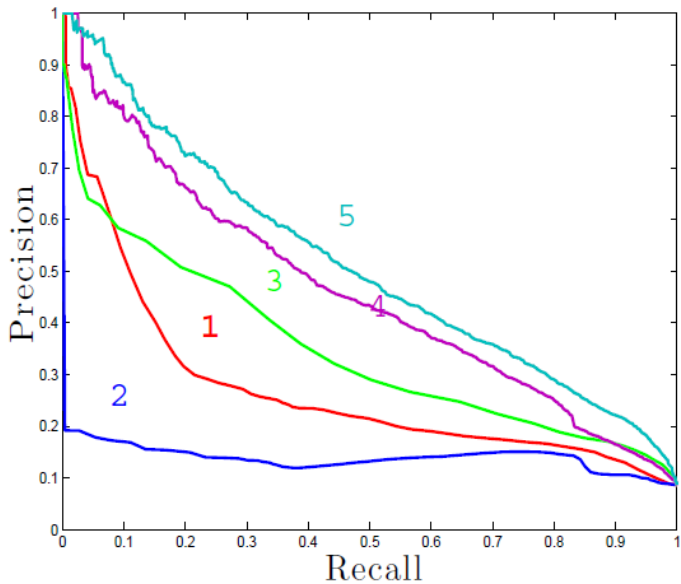
Классическая модель:

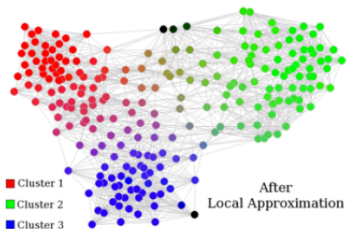
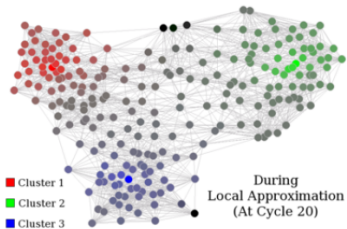


Модифицированная модель:

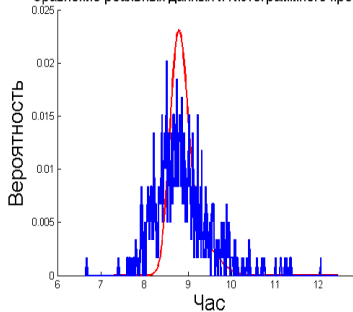




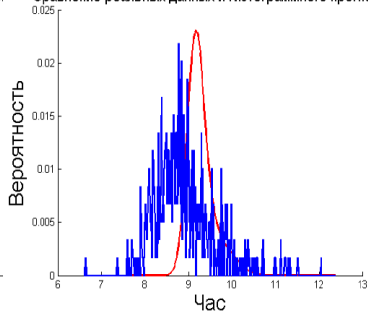


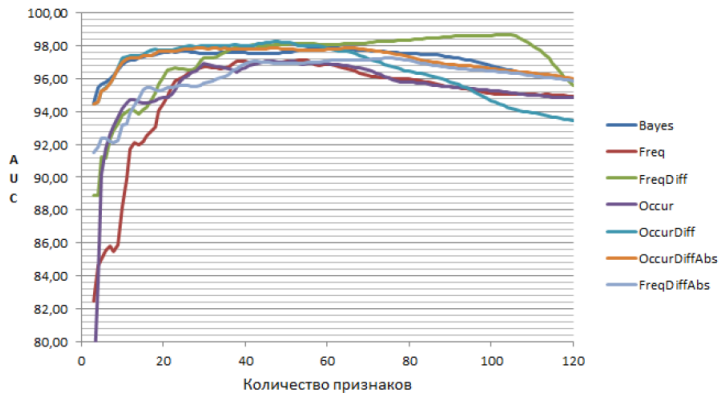


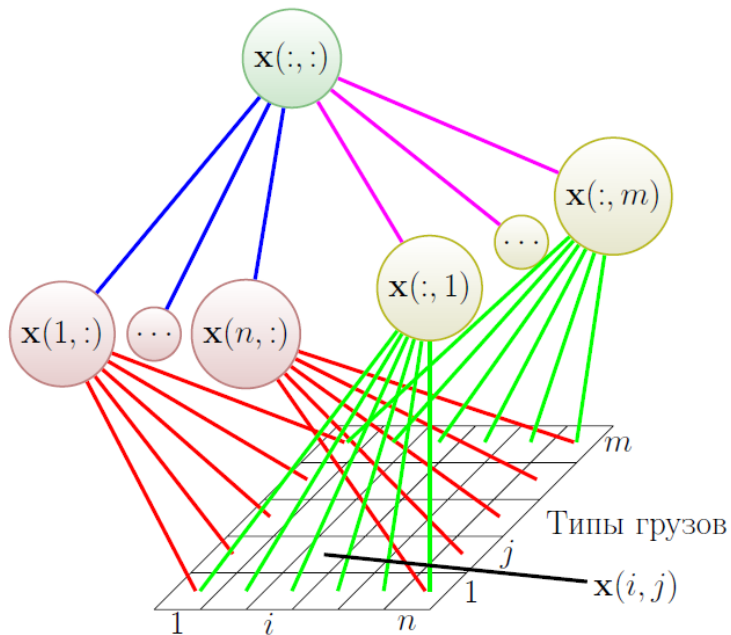
Сравнение реальных данных и гистограммного прои

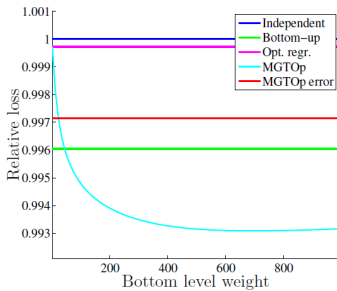


Сравнение реальных данных и гистограммного прогноз

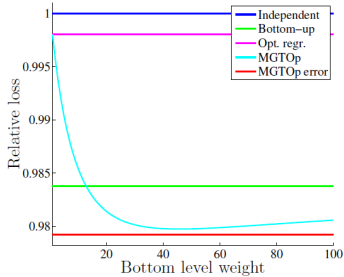








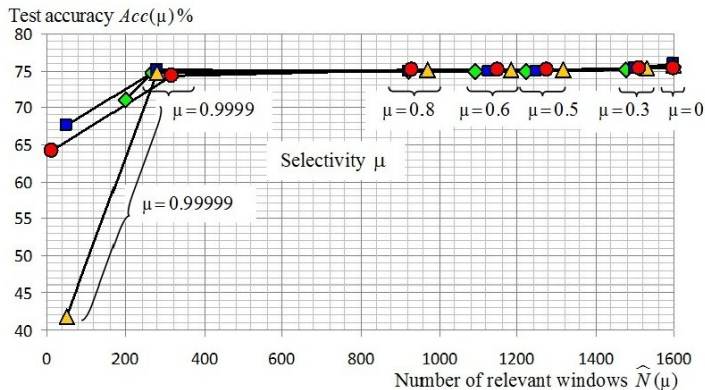
Для РЖД

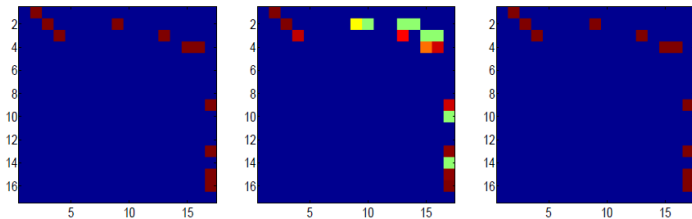


Для электроэнергии

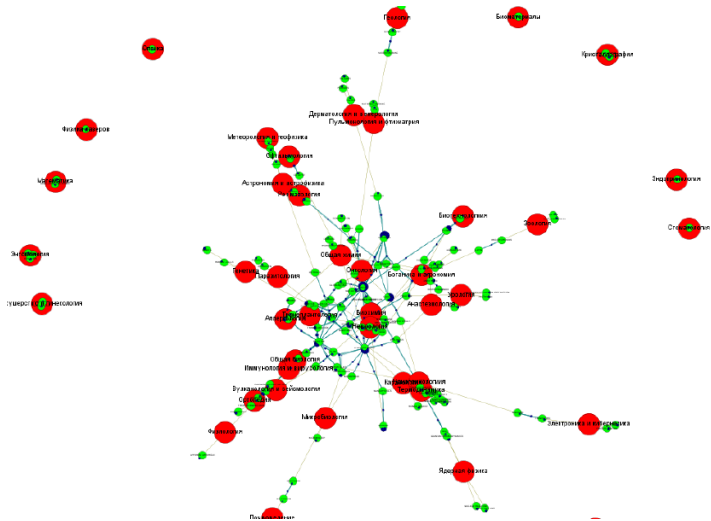
Сравнение интерпретируемости, $\lambda = 0.01$

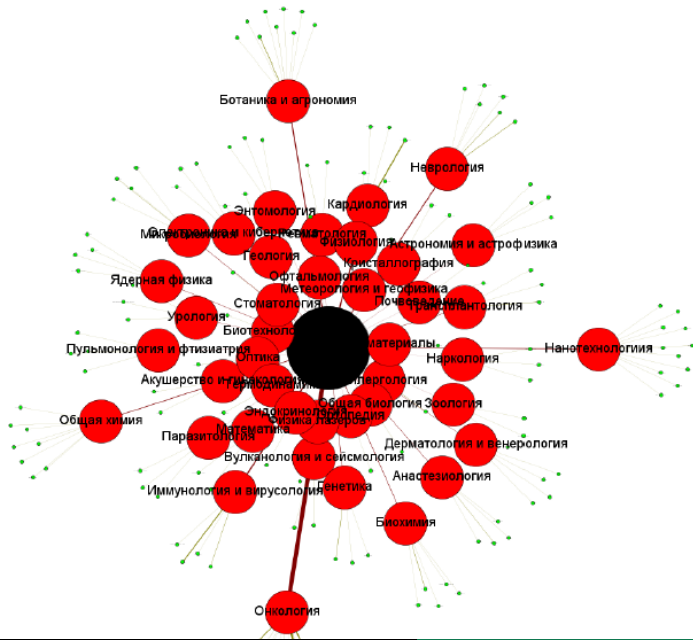
Тема 2	Тема 2
ЗАДАЧА	ЗАДАЧА РАСПОЗНАВАНИЕ
МЕТРИКА	АЛГЕБРАИЧЕСКИЙ ЗАМЫКАНИЕ
ОБЪЕКТ	МОДЕЛЬ АВО
АЛГЕБРАИЧЕСКИЙ	ВЫБОР МЕТРИКА
МНОЖЕСТВО	АЛГЕБРАИЧЕСКИЙ ПОДХОД
МАТРИЦА	ЛИНЕЙНЫЙ ЗАМЫКАНИЕ
МОДЕЛЬ	КРИТЕРИЙ КОРРЕКТНОСТЬ
АЛГОРИТМ	РЕШЕНИЕ ЗАДАЧА
РАСПОЗНАВАНИЕ	СИСТЕМА ТОЧКА
ЗАМЫКАНИЕ	КОРРЕКТНОСТЬ АЛГЕБРАИЧЕСКИЙ
ОЦЕНКА	РАСПОЗНАВАТЬ ОПЕРАТОР
АВО	МАТРИЦА ОЦЕНКА
КОРРЕКТНЫЙ	ПОПАРНЫЙ РАССТОЯНИЕ
УСЛОВИЕ	УСЛОВИЕ РЕГУЛЯРНОСТЬ
КОРРЕКТНОСТЬ	ВЫЧИСЛЕНИЕ ОЦЕНКА
РАССТОЯНИЕ	МАТРИЦА ПОПАРНЫЙ
ОПЕРАТОР	ЗАМЫКАНИЕ МОДЕЛЬ
СИСТЕМА	КОНТРОЛЬНЫЙ ОБЪЕКТ
ПРИЗНАК	ЗАМЫКАНИЕ АВО
ЛИНЕЙНЫЙ	АЛГОРИТМ ВЫЧИСЛЕНИЕ

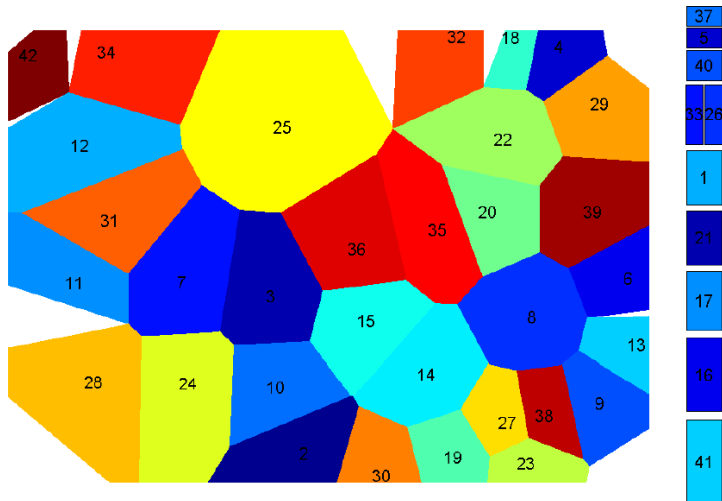


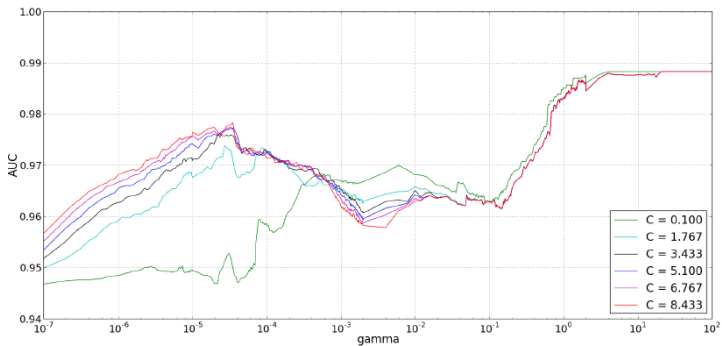


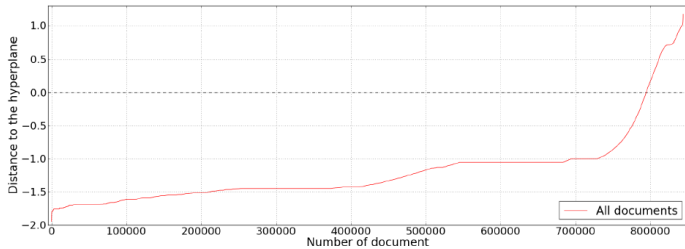
$$f = w_1 \cos(x) + w_2 \sin(x) + w_3 x + w_4 \ln(x + 1).$$

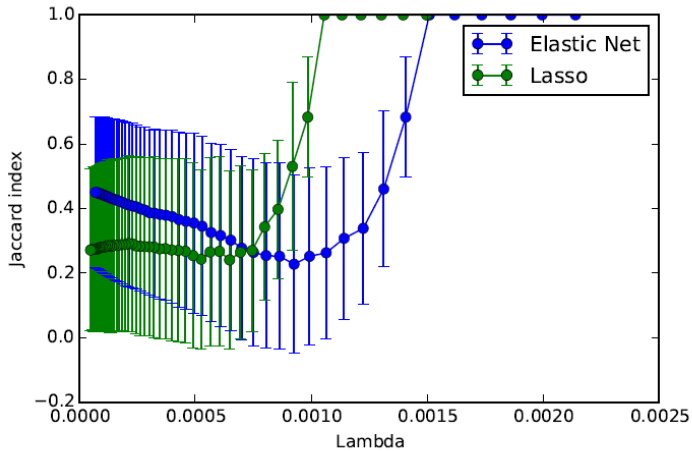


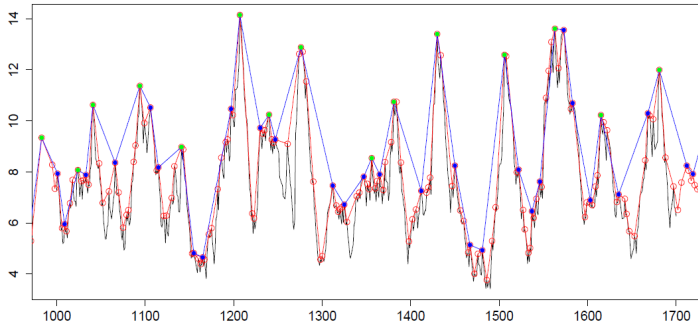


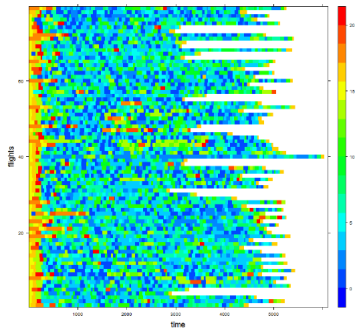
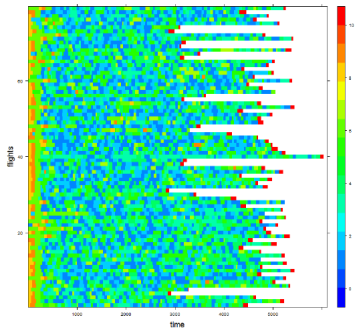


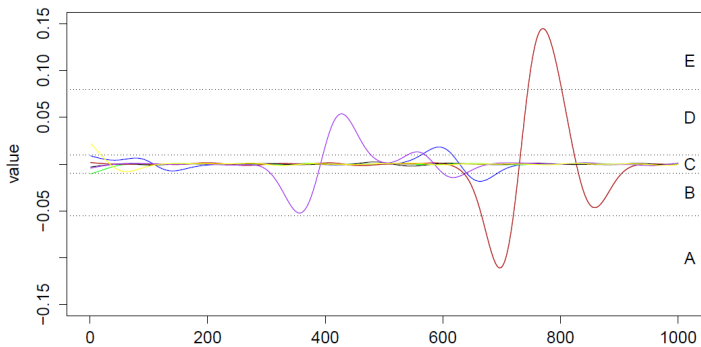


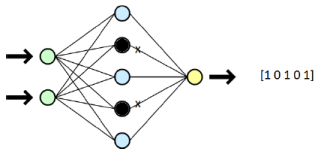




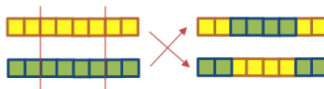






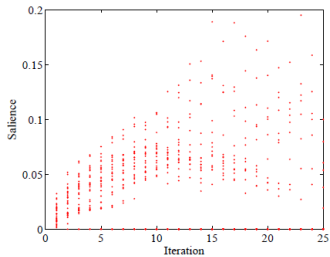


Скрещивание

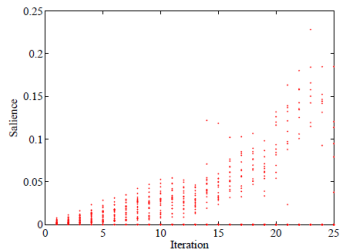


Мутация

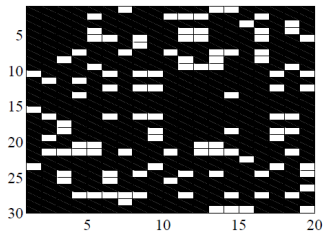




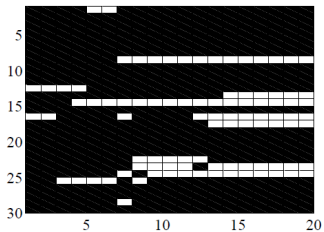
(a) Выборка 1



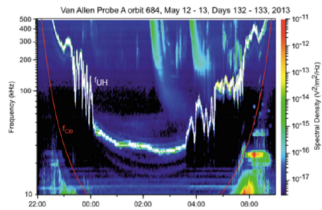
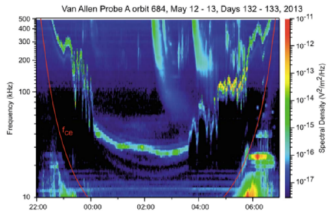
(б) Метрическая выборка



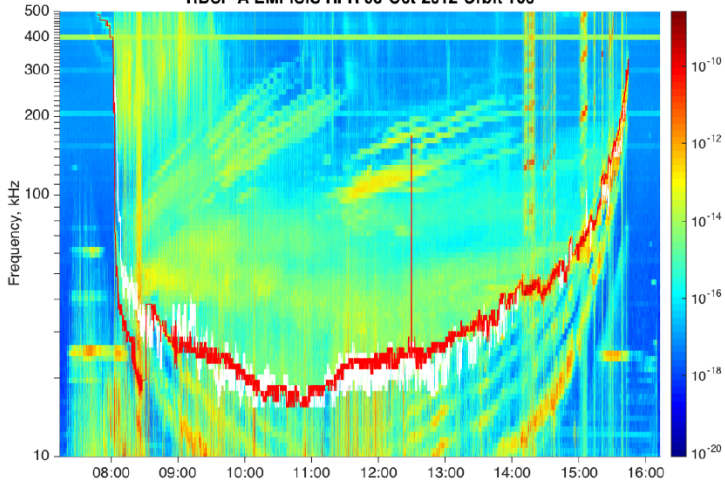
а) Генетический алгоритм. Выборка

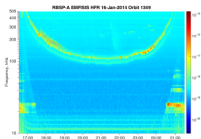


б) Генетический алгоритм.
Метрическая выборка

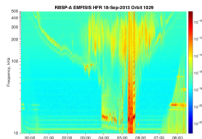


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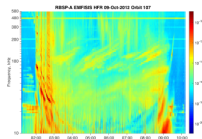




Тип А: 70% орбит
визуально ясный сигнал



Тип В: 20% орбит
необходима
интерпретация сигнала



Тип С: 10% орбит
скрытый сигнал