Learning Volatility of Discrete Time Series Using Prediction with Expert Advice: Experimental study

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Institute for Information Transmission Problems
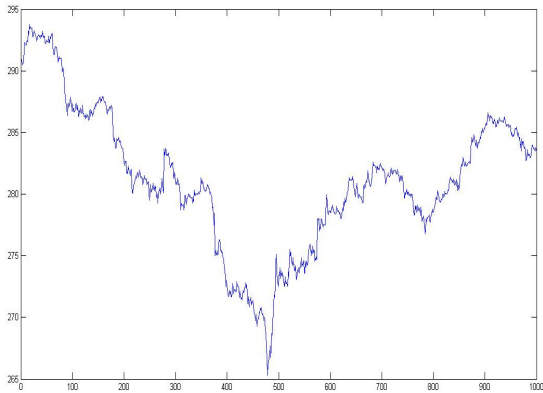Russian Academy of Sciences

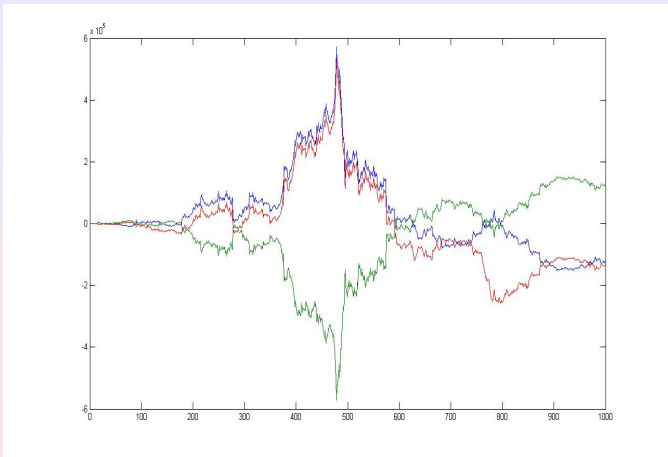SAGA 2009, Sapporo 26-28 October 2009

Data types in examples:

- Evolution of a stock price (additional information: evolution of the volume, fluctuation)
- Gain of the FL (Follow Leader) algorithm (no randomness)
- Gain of the FPL algorithm (randomized)
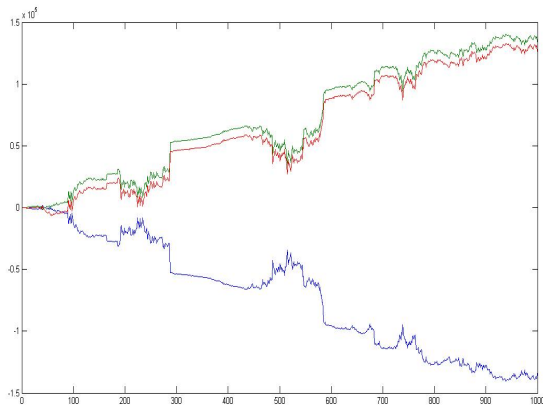
Evolution of the stock price (s=2000,1000)

Gain of the FL(Follow Leader algorithm) (s=2000,1000)

Expected gain of the FPL algorithm (s=2000,1000)

Evolution of the stock price (s=1000,1000)

Gain of the FL algorithm (s=1000,1000)

Expected gain of the FPL algorithm (s=1000,1000)
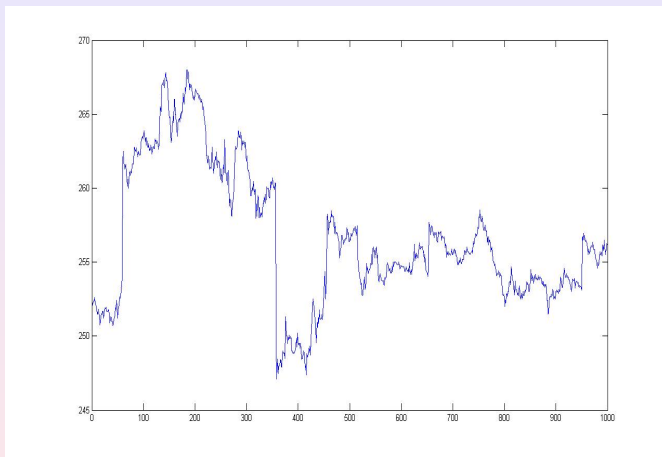
Evolution of the stock price (s=4000,1000)
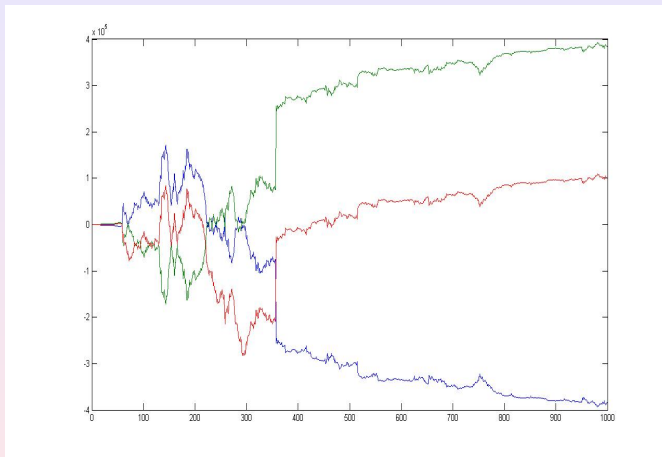
Gain of the FL algorithm (s=4000,1000)
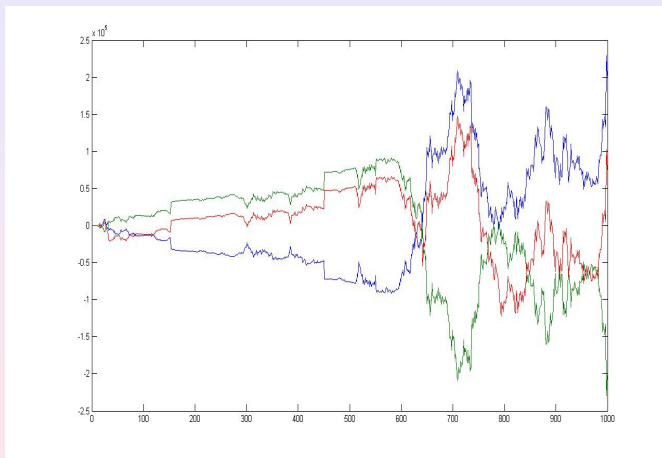
Expected gain of the FPL algorithm (s=4000,1000)
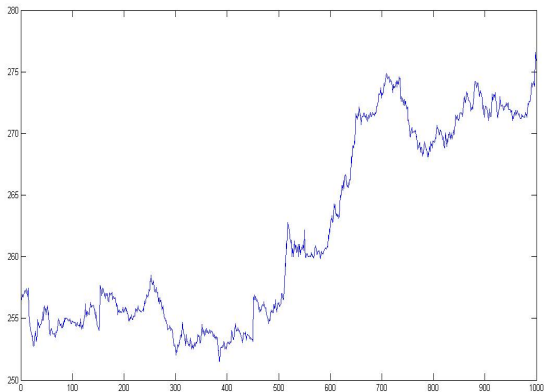
Evolution of the stock price (s=4500,1000)

Gain of the FL algorithm, (s=4500,1000)
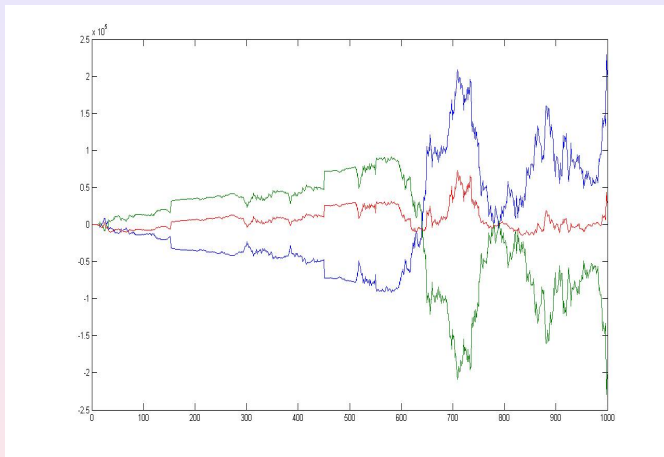
Expected gain of the FPL algorithm, (s=4500,1000)
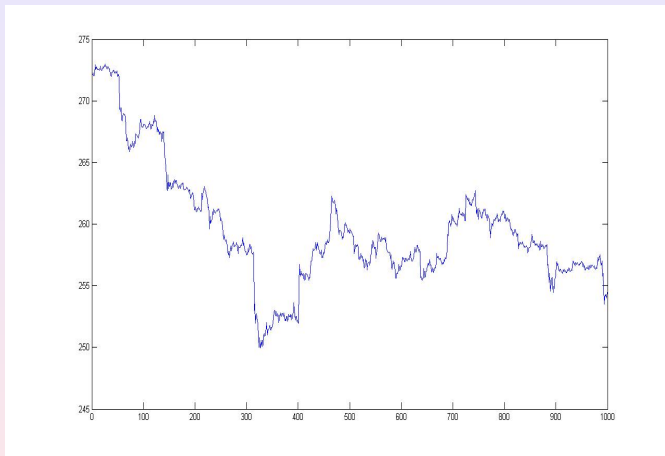
Evolution of the stock price (s=6400,1000)
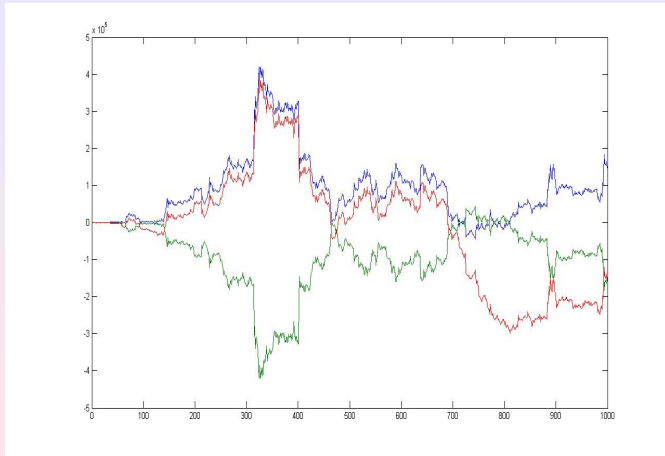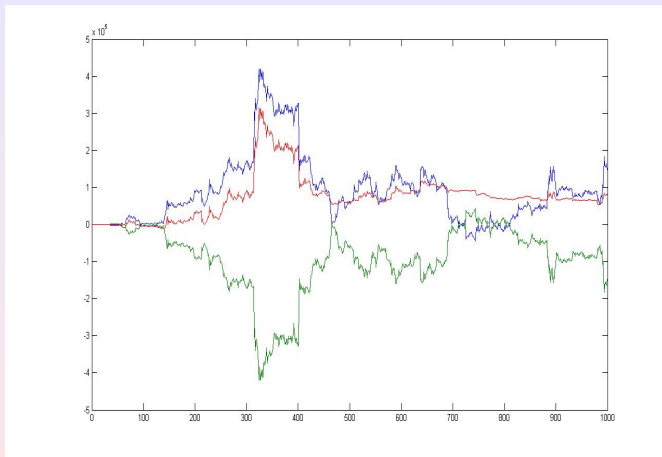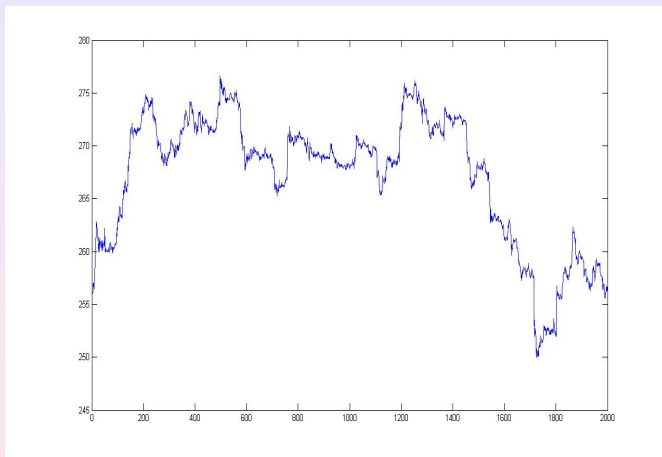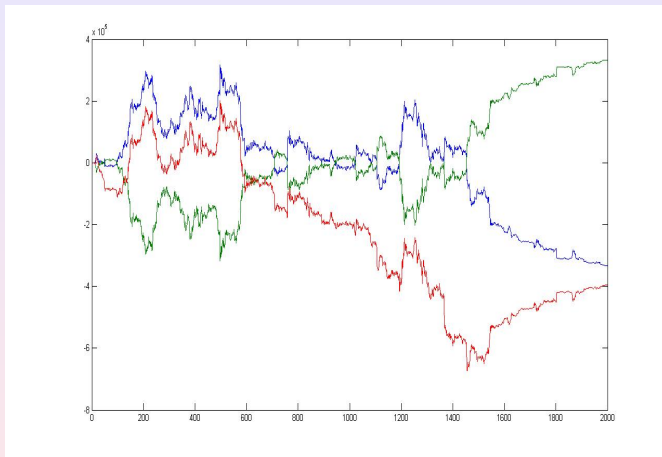
Gain of the FL algorithm, (s=6400,1000)

Expected gain of the FPL algorithm, (s=6400,1000)

Evolution of the stock price (s=5000,2000)

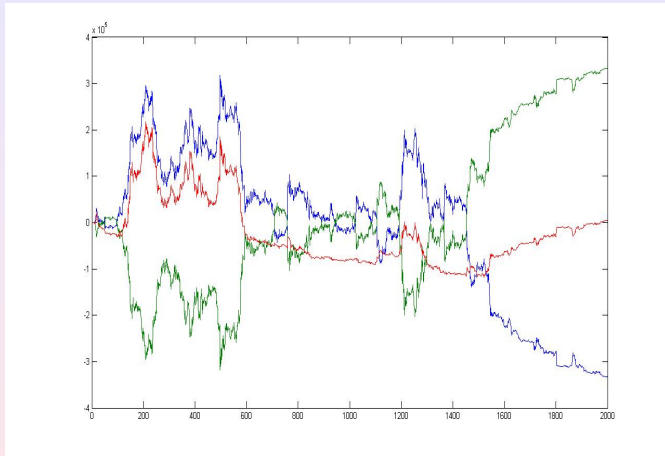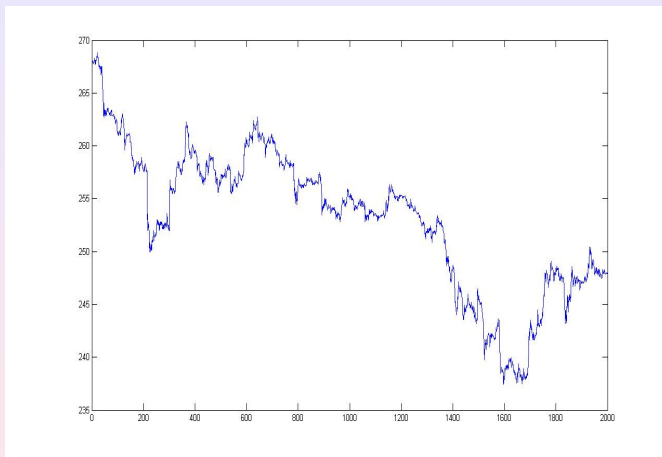Gain of the FL algorithm, (s=5000,2000)
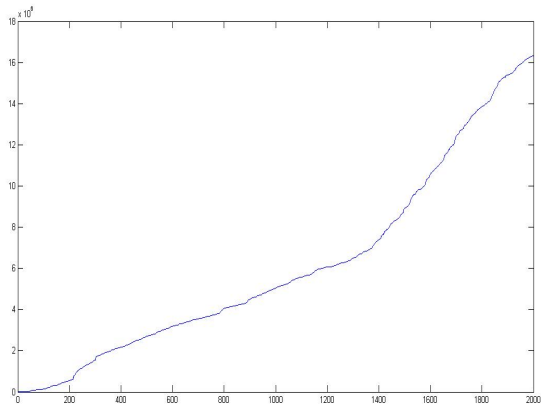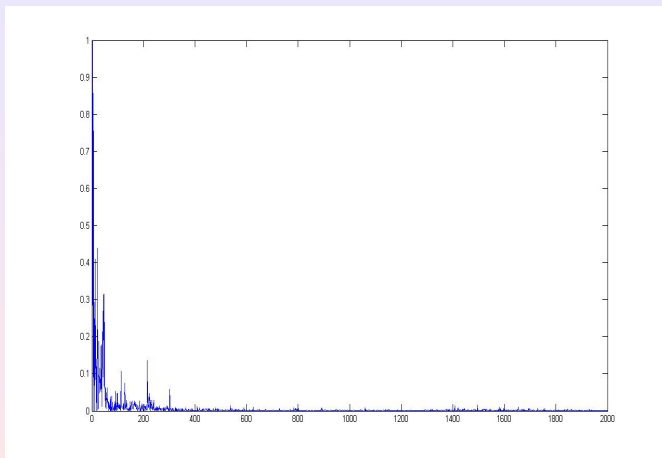
Expected gain of the FPL algorithm, (s=5000,2000)

Evolution of the stock price (s=6500,2000)
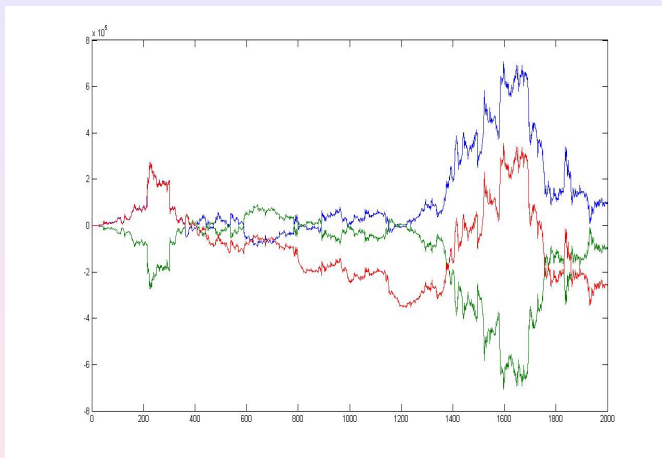
Evolution of the volume of the game (s=6500,2000)
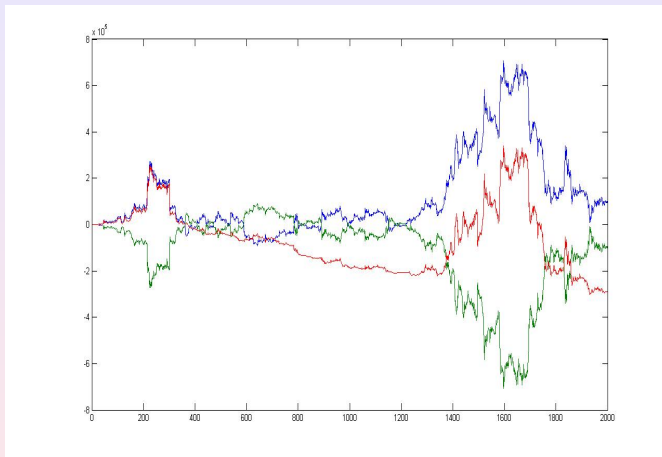
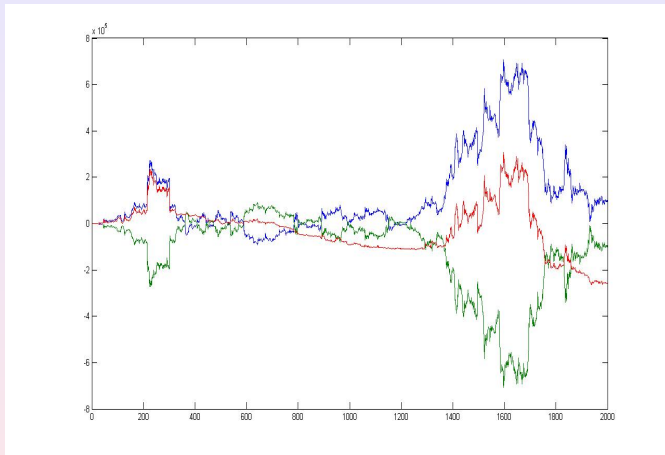Fluctuation of the game (s=6500,2000)

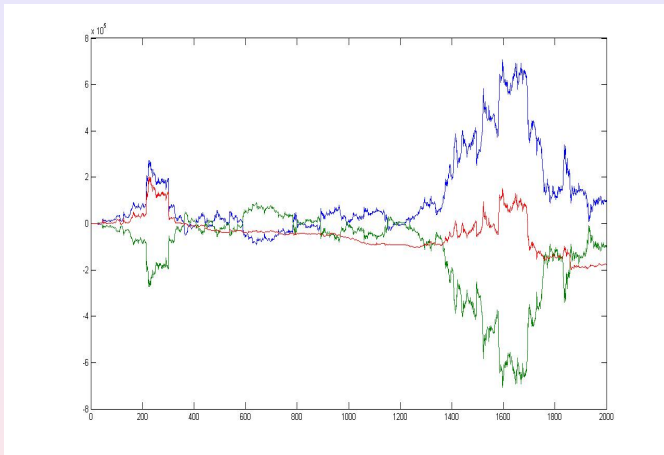Gain of the FL algorithm (s=6500,2000)

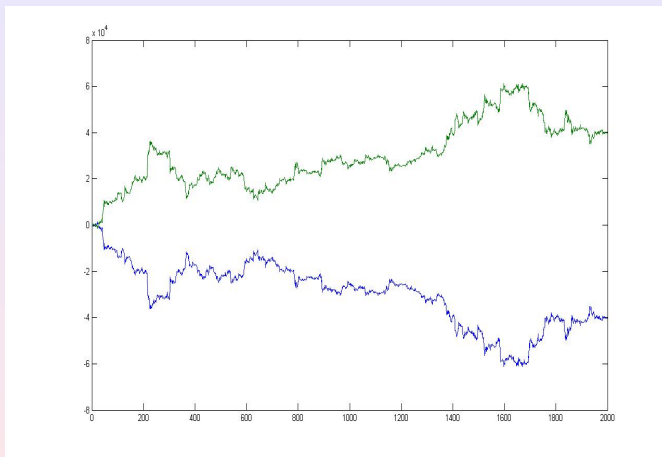Gain of the FPL algorithm, randomness= 0.5, s=6500,2000

Expected gain of the FPL algorithm, randomness= 0.4,
(s=6500,2000)

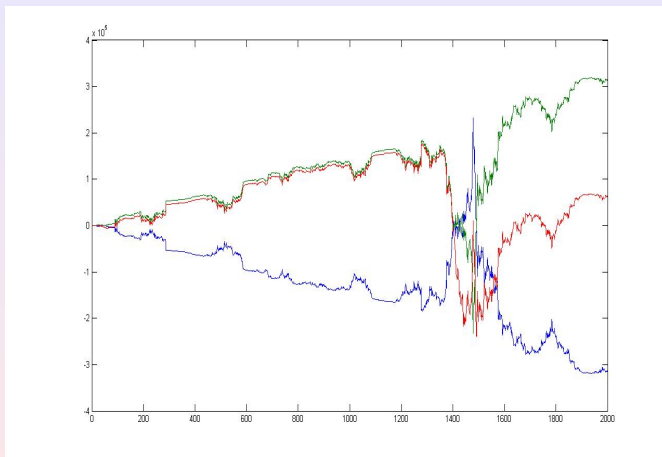Expected gain of the FPL algorithm, randomness= 0.3,
(s=6500,2000)

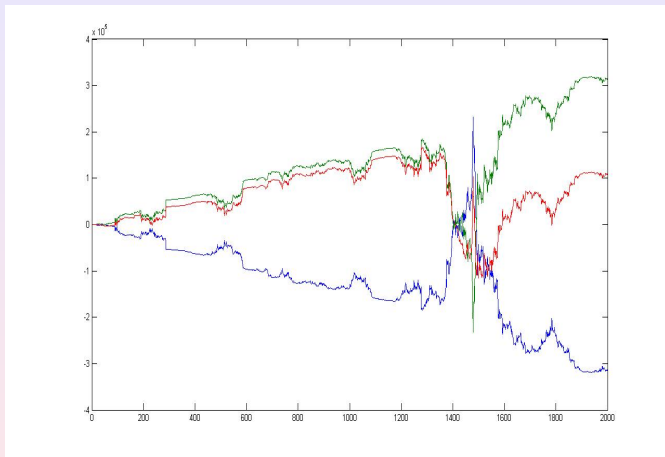Evolution of the number of shares of two experts, (s=6500,2000)
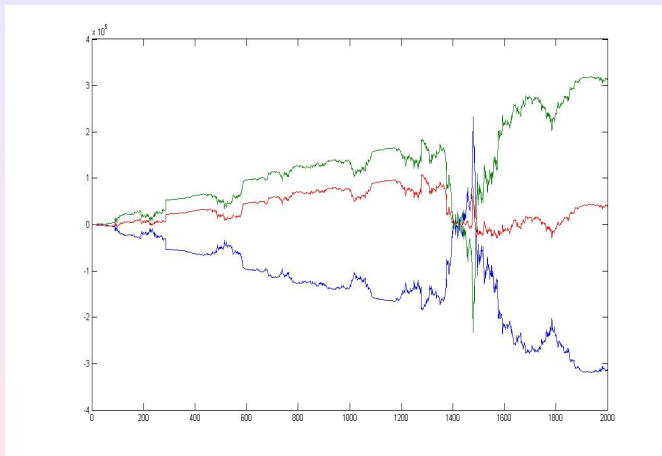
Gain of the FL algorithm (s=1000,2000)

Gain of the FPL algorithm, randomness= 0.5, (s=1000,2000)

Expected gain of the FPL algorithm, randomness= 0.3,
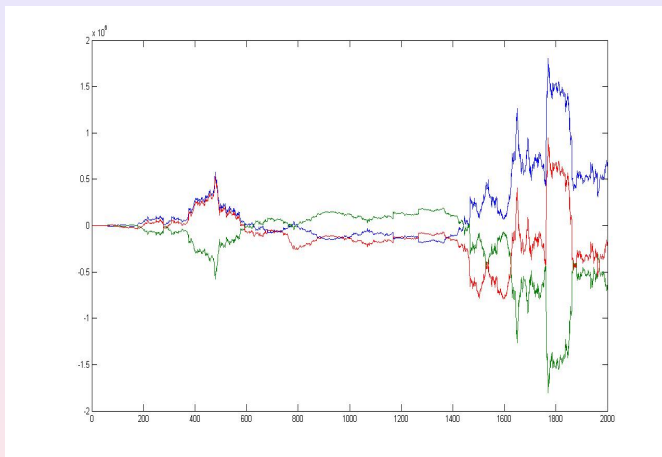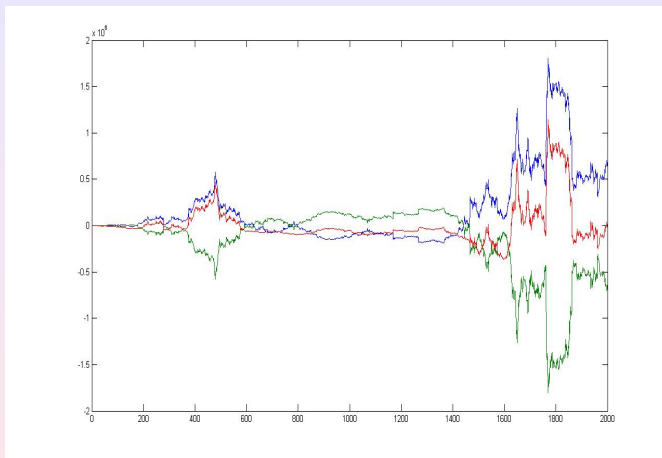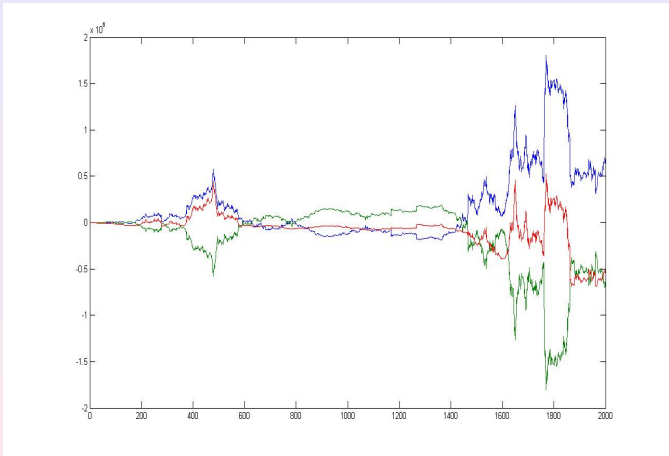(s=1000,2000)

Gain of the FL algorithm (s=2000,2000)

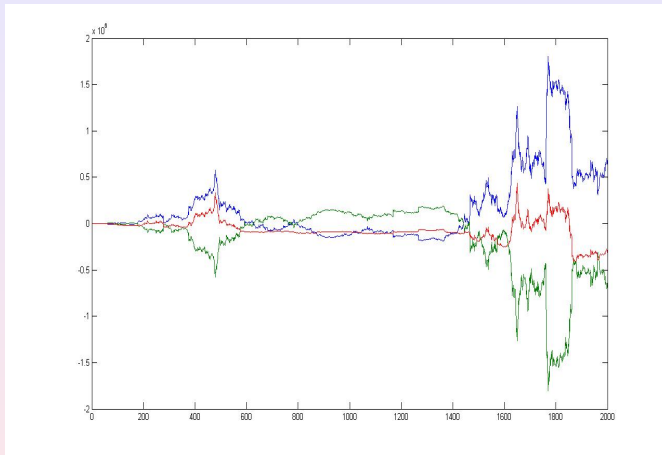Merging strategies

Gain of the FPL algorithm, randomness= 0.5, (s=2000,2000)

Expected gain of the FPL algorithm, randomness= 0.4, (s=2000,2000)

Expected gain of the FPL algorithm, randomness= 0.3,
(s=2000,2000)