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Title: Global Correlation Analysis Based on Optimal Path Identification

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Matching DNA sequences consists in recognizing patterns even though they can occur at very different positions in the different sequences. The same problem arises when comparing well logs in the oil industry. Here, geological formations need to be recognized even though they are deformed between the wells. Standard correlation analysis, which are based on local information, cannot handle this and straight visual methods are typically used. We introduce a method based on identifying optimal paths in a "matching landscape" - Global Correlation Analysis - which identifies matches and quantifies the quality of the matches. We test the method on well log data and on DNA sequences. [1] S.M. Hope, A.A. Moreira, J.S. Andrade Jr and A. Hansen, preprint (2011).