

FRactal Dimension of River Patterns: A Geological Context–Recognition Technique

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The application of computer–assisted fractal analysis allows one to distinguish different shapes on a geometrical basis. When these shapes are geological structures, their differences can be shown to be tied to the geological context. It is thus possible to develop a procedure for automatic classification of geological properties based on the fractal dimension D . We present examples of this technique applied to the basins of the rivers Reno and Santerno (northern Italy), highlighting the differences in the underlying lithology and structure. Further developments are bound to provide tools for semi–automatic recognition of the geological properties of a region.