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Analysis of the Multifractal Fluctuations in Earthquake-related Geoelectrical Signals

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Multifractal fluctuations in the time dynamics of geoelectrical data, recorded in a seismic area of southern Italy, have been analyzed. Our findings show that the multifractality of the signals depends mainly on the different long-range properties for small and large fluctuations. The analysis of the time evolution of the multifractality of the signals reveals a clear association between the enhancement of the multifractality degree and the occurrence of seismic events. This study aims to suggest another approach to investigate the complex dynamics of geoelectrical signals recorded in seismic areas.