

## Identifying the occurrence time of mainshocks by means of Natural Time Analysis

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By employing the new view of time, termed natural time [1], recent advances on the natural time analysis of a seismic catalogue [2] include: First, the fluctuations of the order parameter  $\kappa_1$  of seismicity exhibit a minimum almost simultaneous with the initiation of a Seismic Electric Signals (SES) activity [3,4]. This opens the window of a deeper understanding of the critical nature of preseismic process [5]. Second, a spatiotemporal study of the fluctuations of the order parameter of seismicity leads to an estimate of the epicentral area of a major impending mainshock [6]. Third, by starting the natural time analysis of the seismicity in the candidate epicentral area at the initiation time of the SES activity, we find that the  $\kappa_1$  values converge to the critical value [7-9]  $\kappa_1=0.070$  a few days to one week before a mainshock. Recent applications of this procedure are presented for mainshocks that occurred close to Athens [10] during the last few years.

### References

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