The branching structure of earthquake occurrence revealed by model-

magnitude will be modeled similarly.

The algorithm i

had magnitude m 4.61, and a rupture length set to L 0.1. The total area covered by the earthquakes was constrained to lie over a 2 2 square with periodic boundaries. Figures 1a-c show the simulated earthquakes.

e apply the algorithm qð

preventing the analysis of too large a dataset on a standard desktop computer. The method described above must be modified to account for the fact

the 1999 MW 7.1 He[illegible]992 MW 7.3 [illegible] (B9), 2190, doi:10.1029

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Omori F. (1894), O

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Figure 2: Temporal rates $_{t}\ t, m$ *(top graph, in earthquakes er*

[redacted]

Figure 5: average durations of direct and indirect aftershock sequences, vs magnitude,

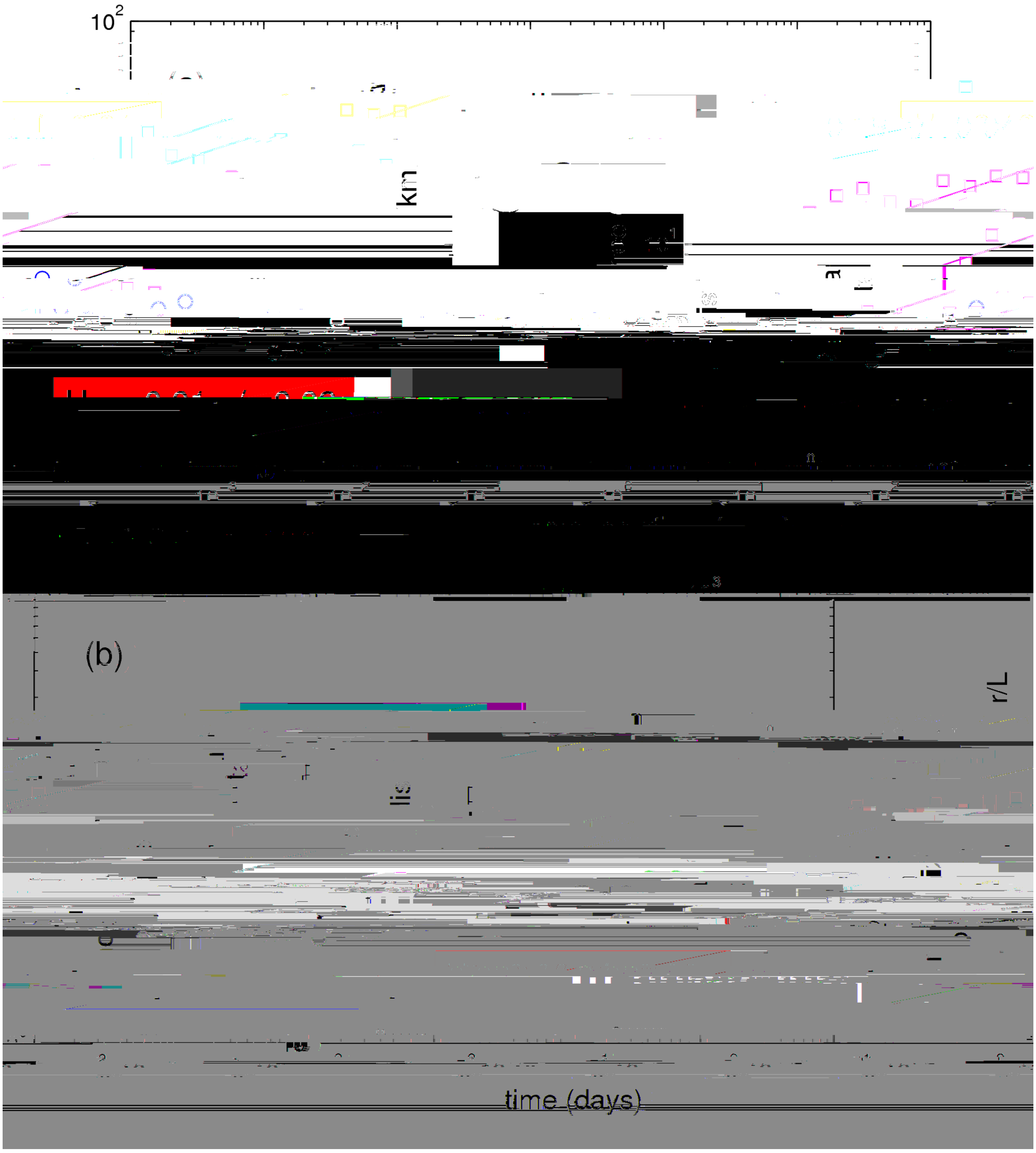

Figure 6: (a) changes in epicentral dis ance be ween mainshocks and af ershocks, dependingon time followinghe mainshock, bof direc (b) and indirec (purple) af ershocks. (b) Same as (a), for epicentral dis ance normalized by he infl nce lenh of he mainshock. The be power lawi of he f m H are hown.

Figure 7: spatial patterns of direct (blue) and indirect (red) aftershocks, in distance normalized to the influence length of the mainshock, for early (t 0.1 day) and late (t 100 days) af3e hocks. The direct afterhocks do not ehpand significantly with tim

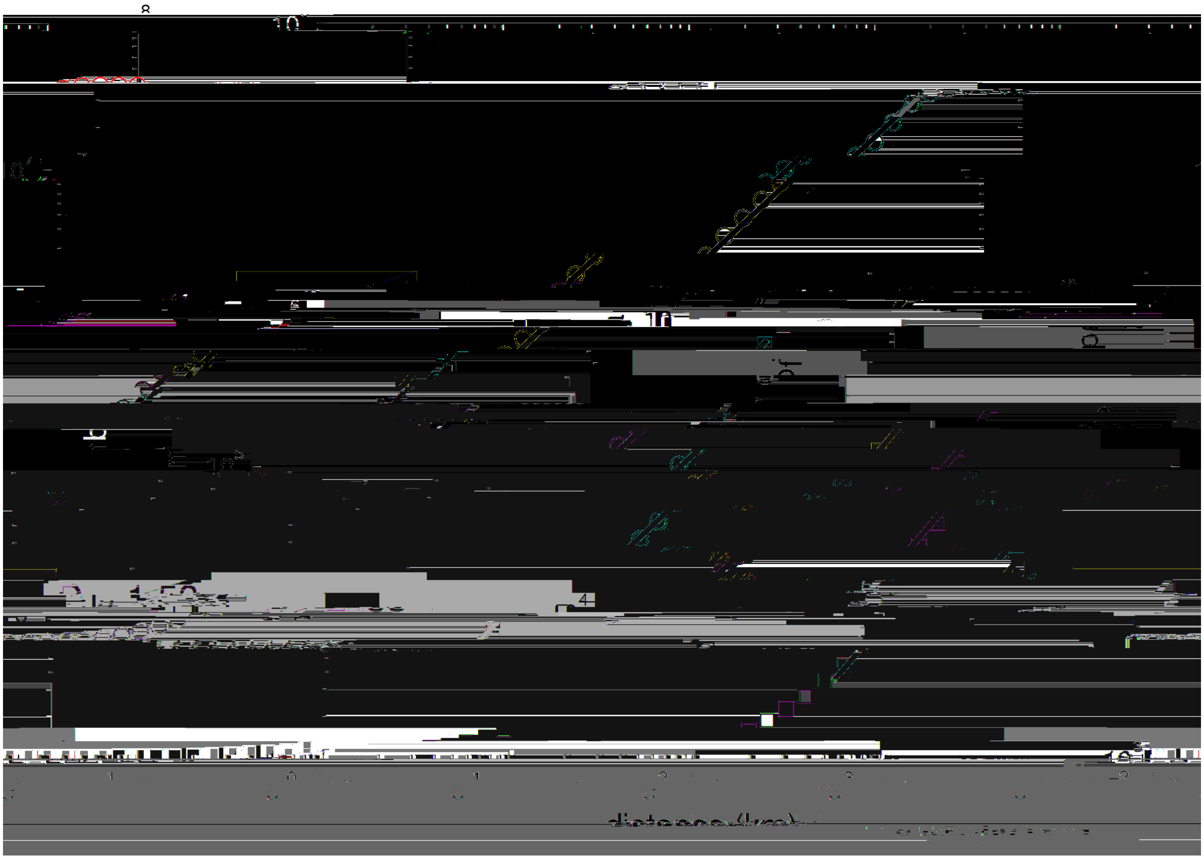

Figure 9: number of pairs N r r
with estimates of the fractal dimension D N r r^D
(in blue ompared to the background seismicity (in red).

Figure

Figure 12: (a) to (d) latitude vs time of occurrence of m 3 *earthquakes. (a) All earthquakes in the original catalogue. (b) Declustered catalogue using the method by Gardner and Knopoff (1974). It does not r*