



Radon precursors to earthquakes: a search for physical mechanisms

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We investigated a series of publications where radon anomalies were reported to precede earthquakes with special emphasis to the proposed physical mechanisms. The aim of our study is not an in extenso listing of all reported radon anomalies but rather an attempt to elaborate certain classes of radon anomalies and their physical origin. By far the most popular attempt to relate radon anomalies with earthquakes was – and still is – a 1:1 approach, i.e. one radon anomaly is related to one earthquake. Whereas the anomaly definition is more or less straightforward, the selection of the “corresponding” earthquake is not. In fact, it is the most critical, sometimes arbitrary procedure. Other types are 1:n and n:n relations describing one radon anomaly in relation to the seismicity of an area or a time segment and a series of radon transients in relation to seismicity in time and/or space, respectively. Finally, we discuss 1:0 types of relations, i.e. a radon anomaly which is not followed by an earthquake. Needless to say, that the latter type is rarely published. We will present examples that non-seismically originated radon anomalies can be strikingly similar to the “real” thing and thus the underlying physical processes might be strikingly similar as well.