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Localized turbulence and dynamical criticality in the solar corona

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The gradient pattern analysis of the soft-X ray coronal active regions have been used to characterize localized turbulent processes due to intermittently interacting loops, from where radio bursts are expected to occur in the metric and decimetric range. In this paper we investigate this phenomenological scenario using solar radio bursts observed at 164MHz, 1.6GHz and 3GHz. The results obtained from return maps, global wavelet spectra and gradient pattern analysis suggest the presence of a correlated stochastic process driving the solar radio burst energy release in metric and decimetric ranges.

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