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**FRACTIONAL BROWNIAN MOTION (fBm) SIMULATIONS AS A DIAGNOSTICS
FOR FRACTAL STRUCTURE OF MOLECULAR CLOUDS**

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The structure formation in the interstellar medium is largely dominated by multi-scale processes such as turbulence through its energy cascade and gravity, which is responsible for the formation of the densest structures. Measuring the scaling behavior of a cloud and decomposing its building blocks using several statistical techniques can be helpful for understanding the physical mechanisms at the origin of cloud structure formation and ultimately the formation of stars. Fractal Brownian motion simulation is a simple way to mimic the multi-scale properties of the interstellar medium and can be used as a diagnostic for the fractal nature of the molecular clouds. As an extension of our previous study (Bogdanova et al., 2020), we apply fBm diagnostics for testing the reliability of the Dendrogram technique for determination of the fractal dimension in the Molecular cloud Rosette.