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Multifractal structure of microscopic eye-head coordination

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Highlights

- Microsaccadic movements are correlated to minute head movements under fixation task experiments.
- Eye and head movements become uncorrelated for observation times greater than of 29.2 seconds at a sampling rate of 300 Hz.
- Both movements are multifractal processes with stochastically different generating mechanisms.
- Eye movements obey a broad distribution of probability values, which likely reflects the way that the eye use to maximize information, and satisfies a stretched exponential distribution, while minute head movements are described well by a lognormal distribution.