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# Mixed Sub-Fractional Brownian Motion

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**Abstract :** We will introduce a new extension of the Brownian motion, that could serve to get a good model of many natural phenomena. It is a linear combination of a finite number of sub-fractional Brownian motions; that is why we will call it the mixed sub-fractional Brownian motion. We will present some basic properties of this process. Among others, we will check that our process is non-Markovian and that it has non-stationary increments. We will also give the conditions under which it is a semimartingale. Finally, the main features of its sample paths will be specified.

**Keywords :** mixed Gaussian processes, Sub-fractional Brownian motion, sample paths
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