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Long-range voter model on the real line

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In the voter model on $\mathbb{Z}$ a countable number of people (called voters) have two opinions, say 0 or 1, and each voter is placed at a site of $\mathbb{Z}$. Each person has an exponential distributed clock. If the clock rings the voter adopts the opinion of a randomly chosen neighbour. It is well known that this process satisfies a moment duality with a coalescing random walk. We are interested in a situation where an uncountable number of voters is placed on the real line and we allow that they adopt their opinion of other voters that are far away. Hence we think of a measure valued process satisfying a moment duality relation with a coalescing system of symmetric α-stable processes with $\alpha \in (1,2)$. Such a process has been constructed by Steven N. Evans in 1997 where he allows more general coalescing mechanisms and infinitely many opinions. In the talk I will introduce the process and talk about some fractional properties. This is joint work in progress with my supervisor Achim Klenke and with Leonid Mytnik.

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