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Limit Theorems for Trawl Processes

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In this talk, limit theorems for trawl processes are presented. First, we focus on the asymptotic behaviour of the partial sums of the discretized trawl process $(X_{i\Delta_n})_{i=0}^{n-1}$, under the assumption that as $n \uparrow \infty$, $\Delta_n \downarrow 0$ and $n\Delta_n \to \beta \in [0, +\infty]$. As expected, the rate of converge depends on whether the process exhibits short or long memory. In the latter, we show that the limit is normally distributed only when the Gaussian component of the associated Lévy basis does not vanish. Secondly, we derive limit theorems of standardized trawl processes in the situation when the Lebesgue measure of the trawl set either shrinks to zero or grows to infinity.