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Analogue preheating in a 1D condensate

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The Analogue Gravity program has had considerable success recently, with ultracold gases playing a particularly prominent role as a system in which quantum aspects of field theory in curved spacetime can be explored. In this talk, I will present the analogy between a modulated 1D condensate and the preheating stage of cosmology, whereby a large number of quasiparticle pairs are excited out of vacuum. Particular attention will be paid to the role played by quasiparticle interactions in the suppression of the growth and the loss of quantum coherence of the produced pairs.

Orateur: ROBERTSON, Scott (CNRS (Institut Pprime))