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Stochastic sources for primordial perturbations

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Coupling the inflaton to light fields during inflation leads to the former dissipating part of its energy into a thermal bath. The thermal fluctuations of this bath act as a source for inflaton perturbations, potentially enhancing the inflationary scalar power spectrum and therefore increasing the predicted abundance of primordial black holes (and the corresponding scalar-induced gravitational waves). We discuss several assumptions and technical details about the calculation of the scalar power spectrum in this context, as well as their observational implications on different scales. The content of the talk is based on 2208.14978 and 2304.05978 with G. Ballesteros, M.A.G. García, M. Pierre, J. Rey.

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