

Reheating, which describes the transition from inflation to the hot big-bang universe, is an important part of any inflationary model. It generally involves various perturbative and non-perturbative processes that result in transferring energy of the inflaton field to the standard model particles. In this talk I will give a brief overview of reheating and the role of parametric resonance. Then I will focus on "combined reheating", in which energy of the inflaton is transferred to relativistic particles in two stages. These are: 1) Non-perturbative production of quanta from inflaton oscillations, and 2) Subsequent perturbative decay of these quanta to relativistic degrees of freedom. The competition between these processes can lead to very different scenarios including parametric resonance with a prolonged stage of thermalization, instant preheating, inefficient reheating, and efficient reheating with rapid thermalization. I will discuss an explicit example of the latter where the inflaton belongs to the observable sector.