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Thesis Title	*Higgs-field bounces and Hawking-Moss instantons during cosmic inflation*
Supervisor	N. Tetradis, Professor
Summary	If a Field Theory has one or more vacua (minima of the potential), which classically correspond to stable states, we can have transitions between them (vacuum decay), either due to quantum tunneling or due to thermal excitations. The transition takes place through a first-order phase transition with the materialization in the false vacuum background of a bubble, within which the field takes the value of the true vacuum. After the creation of the bubble, this expands, almost with the speed of light, converting false vacuum to true. Gravity plays a crucial role in the decay. In this thesis we study the decay probability of the electroweak vacuum in the Standard Model during inflation. From this probability we can obtain bounds on the Hubble parameter H for that period.
Key words	Vacuum decay, Higgs field, Inflation
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