



Contribution ID : 106

Type : Contributed talk

## Vacuum stability of a general scalar potential of a few fields

*Wednesday, 25 May 2016 17:10 (20)*

We find vacuum stability (bounded below) conditions for general scalar potentials of a few fields. The conditions are analytical, necessary and sufficient, and can be applied to a wide range of potentials. As examples, we discuss (1) the vacuum stability conditions of the general potential of two real scalars, without and with the Higgs boson included in the potential, (2) the two Higgs doublet model with no explicit CP breaking, and (3) the  $Z_3$  scalar dark matter with an inert doublet and a complex singlet.

**Primary author(s)** : KANNIKE, Kristjan (NICPB)**Presenter(s)** : KANNIKE, Kristjan (NICPB)**Session Classification** : Cosmo 3