

# Evolution of Universe to a modern state if Dark Matter is given by additional Higgs doublet (inert model)

We discuss thermal evolution of Universe after inflation in the frame of Inert doublet model in the case when modern state of Universe with dark matter is described by inert doublet model.

## Summary

There is an opportunity that Dark Matter is given by additional as compare SM, Higgs doublet (inert model). This Higgs doublet interacts with standard Higgs doublet and don't interact to fermions. During cooling down of Universe parameters of this interaction vary. It can results in change of phase states of Universe. In particular, very probable variant is that after EWSB transition the Universe comes to the state without candidates for Dark Matter and only later on it comes to the modern state with Dark Matter either via 1-st order phase transition or via chain of two 2-nd order phase transitions.

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