

Scalar Dark Matter from Inert Doublet Model

Monday, 7 September 2009 16:40 (15 minutes)

The Inert Doublet Model (IDM) provide a rather simple and yet rich extension of the Standard Model for Dark Matter. The dark matter candidate is the lightest neutral scalar of an extra $SU(2)_L$ doublet which is odd under an unbroken Z_2 symmetry. It can account for WMAP dark matter for 3 very different mass regimes: the low mass regime with $m_{dm} \sim 10$, the middle mass regime with $m_{dm} \sim m_W$, and the high mass regime $m_{dm} > 500$ GeV. In my talk I would like to address the richness of the phenomenology of the IDM and I will show how the constraints and the prospects for detection can vary with the mass range of interest.

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Session Classification: Dark Matter