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## Interference Effect in Di-Higgs Production in SUSY models (MSSM with Gauge Extensions)

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It has been shown that the di-Higgs production cross section could be enhanced by resonant processes or non-resonant processes related to physics beyond the Standard Model. Nonetheless, no study has been done on the interference effect of resonant and non-resonant di-Higgs production (within the context of Minimal Supersymmetric Standard Model). In this talk, I would like to discuss the consequence of interference between resonant and nonresonant di-Higgs production in the MSSM (with an additional  $SU(2)$  gauge group). The SM-like Higgs mass can be around 125 GeV by introducing an additional  $SU(2)$  gauge group, which modifies the trilinear coupling and therefore modifies the non-resonant production. The nonresonant production is also modified through the modification of the top couplings. Then in certain region of the parameter space the interference between the non-resonant production and the resonant production through the heavy CP-even Higgs is important. I am going to show the relevant parameter space and show the interference effect in those regions. ( The model under consideration allows a large region of parameter space where the mass of light CP-even neutral Higgs is around 125 GeV, and constraints from electroweak precision data are satisfied.)

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