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$h^0(125GeV) \to c\bar{c}$ as a test case for quark flavor violation in the MSSM

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We compute the decay width of $h^0 \to c\bar{c}$ in the MSSM with quark flavor violation (QFV) at full one-loop level in the $\overline{\rm DR}$ renormalization scheme. We study the effects of $\tilde{c} - \tilde{t}$ mixing, taking into account the constraints on QFV from the B meson data. We find that the full one-loop corrected decay width $\Gamma(h^0 \to c\bar{c})$ is very sensitive to the MSSM QFV parameters. In a scenario with large $\tilde{c} - \tilde{t}$ mixing, $\Gamma(h^0 \to c\bar{c})$ can differ up to $\sim \pm 35\%$ from its SM value. After estimating the uncertainties of the width, we conclude that an observation of these QFV SUSY effects is possible at a future e^+e^- collider such as ILC.
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