

High Energy Physics - Experiment

Search for the Decay $J/\psi \rightarrow \gamma + \text{invisible}$

The [CLEO Collaboration](#): [J. Insler](#), et al*(Submitted on 1 Mar 2010)*

A search for J/ψ radiative decay to weakly interacting neutral final states was performed using the CLEO-c detector at CESR. A total of 3.7×10^6 tagged J/ψ events was collected at the $\psi(2S)$ resonance and used to study the decay $J/\psi \rightarrow \gamma + X$, where X is a narrow state that is invisible to the detector. No significant signal was observed and upper limits on the branching fraction were set for masses m_X up to $960 \text{ MeV}/c^2$. The upper limit corresponding to $m_X=0$ is 4.3×10^{-6} at the 90% confidence level. This value restricts the singlet Higgs mixing angle in some supersymmetric models that have extended Higgs sectors.

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Report number: CLNS 10/2058

Cite as: [arXiv:1003.0417v1](#) [hep-ex]

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[v1] Mon, 1 Mar 2010 18:33:13 GMT (539kb)

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