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Hidden-Charm Decays: An Elegant Probe for Internal Structure

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In heavy quarkonia, hadronic transitions serve as an enlightened probe for the structure and help to establish the understanding of light quark coupling with heavy degree of freedom. We propose a new model to create light meson(s) in heavy quarkonium transitions, which is inspired by Nambu-Jona-Lasinio model. The model shows its potential to reproduce the observed decay widths and make predictions for the unobserved channels. In this contribution, we present our predictions for the hidden-charm decays of higher S and D wave vector charmonia. We also suggest J^{PC} assignments for several experimentally observed vector charmonium-like states. We hope that our predictions [1] might provide useful references to determine the properties of higher charmonia in ongoing and forthcoming experiments.

[1] M. N. Anwar, Y. Lu and B.-S. Zou arXiv:1612.05396 [hep-ph], Submitted to PRD

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