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## Lattice QCD calculation of the invisible decay $J/\psi \rightarrow \gamma \nu \nu$

*Tuesday, 1 August 2023 10:00 (30 minutes)*

Searching for the dark matter is one of the major goals of contemporary astronomy and particle physics. Many experiments have performed the searches for the  $J/\psi$  radiative decays into invisible particles, and no signal was observed. In the future, several experiments have the great potential to significantly improve the upper limit on the branching fraction of  $J/\psi + \text{invisible}$ . In this talk, we present the first lattice QCD study on  $J/\psi \rightarrow \gamma \nu \nu$ , which serving as a standard model background for this invisible decay. After a continuous extrapolation for three different lattice spacings, an exact value of the branching fraction is obtained.

### Topical area

Hadronic and Nuclear Spectrum and Interactions

**Primary author:** MENG, Yu

**Presenter:** MENG, Yu

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