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Multipole Moments in Radiative Transitions of Charmonia JAMES LEDOUX, Cornell University, CLEO COLLABORATION — Using 24 million $\psi(2S)$ decays created from e^+e^- collisions collected with the CLEO-c detector, we search for the multipole moments M2 and E3 of the radiative transitions in charmonia. The multipole moments are identified by an unbinned maximum likelihood fit to the joint angular distribution of the photons in the decay sequences $\psi(2S) \to \gamma \chi_{(c1,c2)}, \, \chi_{(c1,c2)} \to \gamma J/\psi, \, J/\psi \to \ell^+\ell^-$.

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