

Abstract Submitted  
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**Hybrid structure of  $X(3872)$  and its radiative decays** MAKOTO TAKIZAWA, Showa Pharmaceutical University, KIYOTAKA SHIMIZU, Department of Physics, Sophia University, SACHIKO TAKEUCHI, Japan College of Social Work — We study the radiative decays of the  $X(3872)$  using a charmonium-two-meson hybrid model with the two-meson states consisting of the  $D^0\bar{D}^{*0}$ ,  $D^+D^{*-}$ ,  $J/\psi\rho$ , and  $J/\psi\omega$ . We can reproduce the observed mass of the  $X(3872)$  in this framework. The obtained structure of the  $X(3872)$  explains many of the observed properties, such as the isospin symmetry breaking, the production rate in the  $p\bar{p}$  collision, a lack of the existence of the  $\chi_{c1}(2P)$  peak predicted by the quark model and the absence of the charged partner of the  $X(3872)$ . We shall report the results of the  $X(3872) \rightarrow J/\psi\gamma$  and  $X(3872) \rightarrow \psi'\gamma$  decay rates in our approach.

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