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## Axial-vector meson $a_1(1260)$ as a quasi-bound state of the $K\bar{K}^*$

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In the present talk, we will show how the axial-vector meson  $a_1(1260)$  emerges as a quasi-bound state consisting of the kaon and anti vector kaon or a hadronic molecular state. We first construct a dynamical model for  $\pi\rho$  scattering based on the fully off-mass-shell coupled-channel formalism. The model includes both the  $\pi\rho$  and  $K\bar{K}^*$  channel. The axial-vector meson  $a_1(1260)$  resonance is generated dynamically below the  $K\bar{K}^*$  threshold without any explicit  $a_1$  resonance included. It reveals a certain similarity to the case of scalar meson  $f_0(980)$ , which is well known as the molecular state of the  $K\bar{K}$ . This implies that the  $a_1(1260)$  resonance can be theoretically interpreted as  $K\bar{K}^*$  molecular state or quasi-bound state. We compare the present result to the experimental data on the charge-exchange reaction and finds that it is in good agreement with the mass spectrum corresponding to  $a_1(1260)$ .

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