**The properties of the lightest scalar mesons in a holographic QCD
model** BING-RAN HE, MASAYASU HARADA, Nagoya University, YOUNGMAN
KIM, APCTP, Pohang, YONG-LIANG MA, Jilin University — We study a mixing
structure of light scalar mesons corresponding to the two-quark state, four-quark
state and the glueball state using a bottom-up holographic QCD model. In our
model, the geometry of the five dimensional space-time and the vacuum expectation
value of the glueball field are determined through the Einstein equation by requiring
that the dilaton potential can reproduce the asymptotic freedom of QCD and the
glueball field arises as the fluctuation with respect to the gravity background. By
using the geometry as a background, we add the scalar field corresponding to the
two-quark state and four-quark state. Using this model, we study the spectra of
the light iso-scalar scalar mesons and the mixing among the glueball, the two-quark
states and four-quark states.

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