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Vector meson mass in the chiral symmetry restored vacuum

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I will discuss the effects on chiral symmetry breaking in the vector mesons mass. This is accomplished by separating the four quark operators appearing in the vector and axial vector meson sum rules into chiral symmetric and symmetry breaking parts depending on the contribution of the fermion zero modes. We then identify each part from the fit to the vector and axial vector meson masses. By taking the chiral symmetry breaking part to be zero while keeping the symmetric operator to the vacuum value, we find that the chiral symmetric part of the rho and a1 meson mass to be between 550 and 600 MeV. Similar calculation for the *Kand K1 reveals similar reduction. Implications of vector meson mass in nuclear medium will be discussed. Prospects of K1 and K* meson mass from a nuclear target experiment at JPARC will also be discussed.

Presenter: LEE, Su Houng (Yonsei University)