σ and κ mesons as broad dynamical resonances in one-meson-exchange model NGO THI HONG Xiem, SHOJI SHINMURA, Faculty of Engineering, Gifu University, Yanagido 1-1, Gifu, 501-1192, Japan — The existences of broad scalar σ(600) and κ(700) mesons have been discussed intensively in the experimental and theoretical studies on ππ and πK scatterings. By using chiral perturbation model, J. Oller, A. Gómez and J. R. Peláez confirmed the existence of these mesons as dynamical resonances. In meson-exchange models, their existence has not been established yet. In this talk, using the quasi-potential of meson-exchange model and Lippmann-Schwinger equation, we determine the T and S-matrices, from which we could find the positions of poles in physical amplitudes in the complex E-plane. With the full treatment of meson-meson interactions (ππ − πK − πη − ηη and πK − ηK), for the first time, the existence of the scalar σ(600) and κ(700) mesons are confirmed in one-meson-exchange model. There are two kinds of form factors in our model: the monopole and the Gaussian. Our recent results show that the poles σ and κ appear at around 410 − i540MeV and 650 − i20MeV for monopole form factors, respectively. For Gaussian form factors, the poles σ and κ, respectively, are at 360 − i510MeV and 649 − i190MeV.

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