On the tensor to vector coupling ratio, f_{vNN}/g_{vNN} in the $pp \to ppv$ ($v = \phi, \omega$) reaction

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We report our results for ϕ and ω meson productions in pp collisions near threshold energies [1, 2]. The calculation includes both the initial state and the final state interactions, extending the calculations of Ref. [3]. We show that the angular distributions for these mesons can give a strong constraint on the tensor to vector coupling ratio, $\kappa_v \equiv f_{vNN}/g_{vNN}$ ($v = \phi, \omega$). One of the highlights is the extraction of $\kappa_\omega \simeq -2.0$, using the data for the angular distribution [4]. We also discuss a possibility of a large, OZI-violating value for the ϕNN coupling constant, $g_{\phi NN}$.

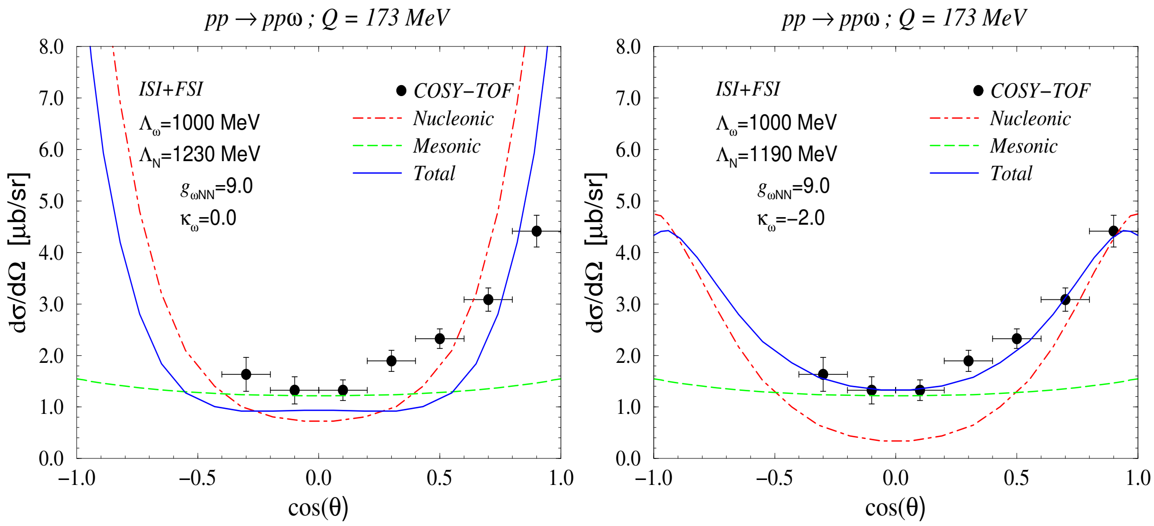

Figure 1: Calculated angular distributions of the ω in the overall center-of-momentum frame in our model [1, 2] for two values of κ_ω. Data are taken from Ref. [4].

References

[1] K. Nakayama, K. Tsushima, in preparation.

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