Baryon+Baryon→$(\Omega\Omega)_{J^{\pi}=0^{++}}$+X Cross Section Calculation

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Abstract: The cross sections of $\Omega+\Xi\to(\Omega\Omega)_{J^{\pi}=0^{++}}+K(K^*)$ and $\Omega+\Omega\to(\Omega\Omega)_{J^{\pi}=0^{++}}+\eta'(\varphi)$ are studied by using an effective Hamiltonian method. For the two pseudo-scalar meson production processes, the cross sections are still in the order of several μbs, but for the two vector meson production processes, the cross sections are about 10 times larger than those in pseudo-scalar meson production case when the coupling constants of vector meson fields are fixed according to $g_{NN\rho}$ and $f_{NN\rho}$ in NN scattering and the SU(3) relation.

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