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Spin alignment of K^* induced by baryonic inhomogeneity

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The difference between the spin alignments of K^* and those of ϕ at the low collisional energies is a puzzle raised by the recent experiments. Unlike ϕ meson, K^* , carrying a unit strange charge, should react to strange potential. In this talk, I shall first convince you that the strange chemical potential is not small in a baryon-rich medium for keeping strange neutrality, and then derive the spin alignment induced by strange, and hence baryon chemical potential gradient using linear response theory, with the transport coefficients expressed, w/o any approximation, in terms of the K^* 's in-medium spectral properties by employing Ward-Takahashi identity. The magnitudes of these coefficients, and hence of the spin alignment, will be further estimated under the quasi-particle approximation.

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