

Abstract Submitted
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Time-Dependent Variational Approach to the pure Gauge Theory for Evaluating the Shear Viscosity¹ YASUHIKO TSUE, TONG-GYU LEE, HIROSHI ISHII, Kochi University — The time-dependent variational approach to the pure Yang-Mills gauge theory, especially a color $su(3)$ gauge theory, is formulated in the functional Schrödinger picture with a Gaussian wave functional approximation. The equations of motion for the quantum gauge fields are formulated in the Liouville-von Neumann form. This variational approach is applied in order to derive the shear viscosity, which is one of the transport coefficients for the pure gluonic matter, by using the linear response theory. As a result, the contribution to the shear viscosity from the quantum gluons is zero up to the lowest order of the coupling g in the quantum gluonic matter.

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