

関係者各位、

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題目： Correlations in dense plasmas: Spectral line features and modifications of nuclear reactions.

講師： August Wierling 氏 (ドイツ、Rostock大学教授)

日時： 2010年2月10日 (水) 13:30~15:30

場所： 理学部2号館4階09号室 (2-409)

要旨：

Dense plasma properties have become of wide-spread interest for understanding both, laser-created plasmas in the laboratory as well as the interior of many astrophysical objects such as giant planets, brown dwarfs, and even the solar core. Utilizing these properties to precisely infer parameters such as density and temperature or nuclear reaction rates require a detailed knowledge of many-body effects in dense plasmas. The Green's function technique can serve as a powerful method to systematically account for these effects, e.g. bound-state formation and pressure ionization, dynamical screening, phase-space occupation, and in-medium scattering. As applications, the modification of spectral-line shapes in dense laboratory plasmas as well as the influence of screening on nuclear reaction rates in stellar plasmas is discussed. In particular, the electron capture by  ${}^7\text{Be}$  under solar core conditions is studied.

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