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Strongly Interacting Fermi Gases: Current Issues and Future Prospects

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There has been rapid development in the study of interacting atomic Fermi gases last year. In this talk, I shall discuss the issues brought forth by current experiments with regard to the nature of the newly found pair condensate, the universal thermodynamic and dynamical features in strongly interacting regime, and new methods of probing strongly interacting physics not possible in solid state environment. In the last part of the talk, I shall discuss the exciting theoretical possibilities associating with the latest experimental progress on producing molecules with higher orbital angular momentum, and on strongly interacting Fermi gases in optical lattices.

In collaboration with Roberto Diener.