

Abstract Submitted
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The isotropic local Wigner-Seitz model: An accurate theoretical model for the quasi-free electron energy in fluids CHERICE EVANS, Department of Chemistry, Queens College – CUNY, New York, NY 11367, GARY L. FINDLEY, School of Sciences, University of Louisiana at Monroe, Monroe, LA 71209 — The quasi-free electron energy $V_0(\rho)$ is important in understanding electron transport through a fluid, as well as for modeling electron attachment reactions in fluids. Our group has developed an isotropic local Wigner-Seitz model that allows one to successfully calculate the quasi-free electron energy for a variety of atomic and molecular fluids from low density to the density of the triple point liquid with only a single adjustable parameter. This model, when coupled with the quasi-free electron energy data and the thermodynamic data for the fluids, also can yield optimized intermolecular potential parameters and the zero kinetic energy electron scattering length. In this poster, we give a review of the isotropic local Wigner-Seitz model in comparison to previous theoretical models for the quasi-free electron energy. *Acknowledgments: All measurements were performed at the University of Wisconsin Synchrotron Radiation Center. This work was supported by a grants from the National Science Foundation (NSF CHE-0956719), the Petroleum Research Fund (45728-B6 and 5-24880), the Louisiana Board of Regents Support Fund (LEQSF(2006-09)-RD-A33), and the Professional Staff Congress City University of New York.*

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