

## THEORETICAL ANALYSIS OF ATOMIC IMPURITIES IN LIQUID HELIUM-4

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We have recently developed an integral equation theory for quantum fluids obeying Boltzmann statistics<sup>a</sup>. We refer to it as a generalized Ornstein-Zernike (GOZ) integral equation for quantum fluids. In the present study, the GOZ theory has been applied to atomic impurities immersed in liquid helium-4 at 4 K. Solvation structure of alkali metal and rare gas atoms in the solution was analyzed. The former is a typical example of the so-called “atomic bubble”; the latter “snowball”. Detailed thermodynamic analysis will be presented.

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<sup>a</sup>K. Shinoda, S. Miura, and S. Okazaki, *J. Chem. Phys.* **114**, 7497 (2001); **115**, 4161 (2001).