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2D Lennard-Jones as complex liquid ALEXANDER PATASHINSKI, Northwestern University, RAFAL ORLIK, ANTONI MITUS, Polytechnic University, Wroclaw, Poland, MARK RATNER, Northwestern University — The high viscosity, large relaxation times, and other signature features of complex liquids are associated with substantial local order and long-living significant liquid structures in these liquids. In 3D Lennard-Jones liquids, representing simple liquids, no detectible structural local order in 13-atom clusters was found at the melting line. In contrast to that, the 2D Lennard-Jones liquid appears locally ordered: about half of the atoms are, at any time, in recognizable hexagonal cages. We present results of a study of the statistics and dynamics of local order in 7-atom clusters in 2D Lennard-Jones-based system. The study includes states along a supercritical isotherm in the range of densities where the system changes from disordered liquid to ordered solid state.

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