

Abstract Submitted
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Stability of a bound system of electron or proton orbiting a small black hole in cosmic conditions DANIEL GRAY, Utah Valley University — Mini black holes (BH) of various mass could be left over in space from the early expansion Big Bang phase (so called primordial BHs) and can be a part of dark matter (DM). As a result of interaction of those BHs with the interstellar hydrogen they could form a bound system with an electron or a proton (or both). However, the stability of such system depends on a few factors – BH mass, limits imposed by both special relativity (SR) and general relativity (GR) on such quantum system, gravitational radiation they could emit, as well as the environmental factors – ionizing effects of starlight, starwind, cosmic microwave background radiation (CMBR), interstellar magnetic field, etc. We analyze those limitations to find lifetimes of such “gravitational atoms” in typical interstellar space conditions

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