

Abstract Submitted  
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**Hamiltonian Monodromy: Unexpected behavior of atoms in traps**<sup>1</sup> J.B. DELOS, William and Mary, G. DHONT, D. SADOVSKII, B. ZHILINSKII, Universite Littoral — A system exhibits monodromy if we take the system around a closed loop in its parameter space, and we find that the system does not come back to its original state. Many systems have this property, including hydrogen in crossed fields, cylindrically symmetric barrier systems, such as the “mexican hat” potential, the spherical pendulum, dipolar molecules in fields, and near-linear molecules. Atoms in a trap can display a newly discovered dynamical manifestation of monodromy. We show the behavior in computations, and provide a theoretical explanation.

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