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**Robert C Haraway, III\*** (bobbycyiii@fastmail.com), 506 MSCS Building, Oklahoma State University, Stillwater, OK 74074, and **Neil R Hoffman**. *On the complexity of cusped non-hyperbolicity.*

We show that the problem of showing that a cusped 3-manifold  $M$  is not hyperbolic is in NP, assuming  $S^3$ -recognition is a coNP problem. Our key contributions are a certificate that a manifold is  $T^2 \times I$  and a certificate that an irreducible 3-manifold is toroidal, both verifiable in polynomial time. (Received September 13, 2019)