



Student Name Haonan Liu Student ID *****

Doctoral Degree in Physics

Thesis Title:

Superradiant Atomic Beam Laser

Have you performed research involving human subjects which requires approval from the Institutional Review Board (IRB)? Yes No

IRB Protocol Number _____

Have you used live animals, animal tissue, or observational animal work which requires approval from the Institutional Animal Care and Use Committee (IACUC)? Yes No

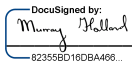
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Attach the final copy of thesis/dissertation for committee review. While formatting changes may be requested by the Graduate School, the content of the attached document should be final.



Approvals:

Committee Chair Name Murray Holland

Signature  Date Signed 11/10/2021

Committee Member Name James Thompson

Signature  Date Signed 11/10/2021

The final copy of this thesis has been examined by the signatories, and we find that both the content and the form meet acceptable presentation standards of scholarly work in the above-mentioned discipline.