

PERSONAL INFORMATION	TAPIR, MC 350-17 California Institute of Technology Pasadena, CA 91125	rtso@tapir.caltech.edu www.rhondaletso.org Skype: rhondale.tso
RESEARCH	Gravitational Waves, Theory & Tests of Relativity.	
EDUCATION	California Institute of Technology (Caltech) , Pasadena, CA USA. PhD Candidate, Physics. M.S., Physics, 2019.	
	Embry-Riddle Aeronautical University (ERAU) , Prescott, AZ USA. B.S., Space Physics, 2012.	
AWARDS, GRANTS, FELLOWSHIPS	2019 APS Outreach Mini Grant	2019
	Kavli Summer Fellowship	2017
	NSF Graduate Research Fellowship	2015
	Ford Foundation Predoctoral Fellowship	2015
	Gates Graduate Scholar	2015
RESEARCH EXPERIENCE	Caltech , Pasadena, CA USA.	Aug. 2015 → Present
	· Position: Fully-supported Graduate Student. Advisor: Yanbei Chen.	
	Niels Bohr Institute , Copenhagen DNK.	Summer 2017
	· Position: Kavli Summer Fellow. Collaborators: Jonathan Gair, Daniel E. Holz, and Joey S. Key.	
	Columbia University , New York, NY USA.	Aug. 2013 → Aug. 2015
	· Position: Research Staff Assistant. Advisor: Janna Levin.	
	IUCSS ¹ , Bloomington, IN USA.	Summer 2011
	· Position: Undergraduate research student. Advisor: V.A. Kostelecký.	
	University of Chicago , Chicago, IL USA.	Summer 2010
	· Position: NSF REU ² student. Advisor: Robert Wald.	
MENTORING	Joseph Mina	Summer 2020
	· Freshman Summer Research Institute, Caltech.	
	Katie Chamberlain (co-mentor: Davide Gerosa)	Summer 2017
	· Summer Undergraduate Research Fellow, Caltech.	
TEACHING	· Teaching Assistant (Phys 1a: Classical Mechanics), Caltech.	Fall 2020
	· Scribe for Disability Resources, Northern Arizona University.	2012-2013
	· Math educator at Flagstaff High School (Kinłani Dormitory).	2012-2013
PROFESSIONAL MEMBERSHIP	LIGO Scientific Collaboration (50% membership)	2015 → Present
	American Physical Society (student membership)	2015 → Present
	· Division of Gravitational Physics (DGRAV), Division of Astrophysics (DAP).	

¹Indiana University Center for Spacetime Symmetries.²National Science Foundation Research Experience for Undergraduates.

COMMUNITY
OUTREACH

High School STEM Outreach for Native Americans

- Awarded the 2019 APS Outreach Mini Grant to translate LIGO's discoveries to the Navajo language and expand Native American outreach efforts.
- STEM Outreach on Navajo Nation in 2013 and 2016-2018, partnered with Jasmine (Kiranjyot) Gill and Marek Szczepańczyk in 2016 and 2017. Advisory Council member on NSF-funded continuation of the program.
- STEM Outreach on Yakima Reservation in 2017, partnered with LIGO Operator Corey Grey.

Caltech Science Outreach

Feb. 2016 → Present

- Extensive outreach with LIGO Lab, NASA Jet Propulsion Lab (JPL), and [Caltech Astronomy Outreach](#). Repeated volunteering at JPL Open House.

Physics Bridge Program Visitations

- University of Chicago [Physics Bridge Program](#) June 19, 2017
- Princeton University [Physics Bridge Program](#) May 16, 2017

Guest Speaker for *Los Angeles Astronomy on Tap Series*

June 12, 2017

Columbia University Science Outreach

Aug. 2013 → Aug. 2015

- Extensive public outreach with [Columbia Astronomy Public Outreach](#).

SKILLS

Proficiency in Python, Mathematica, MATLAB, Maple, C, LaTeX.

Languages: English (native), Navajo (limited working proficiency).

SHORT-AUTHOR
PUBLICATIONS

1. **R. Tso**, D. Gerosa, and Y. Chen: *Optimizing LIGO with LISA forewarnings to vastly improve black-hole spectroscopy*, [PRD](#), **99**, 124043 (2019).
2. **R. Tso** and M. Zanolin: *Measuring violations of General Relativity from single gravitational wave detection by non-spinning binary systems: higher-order asymptotic analysis*, [PRD](#), **93**, 124033 (2016).
3. V.A. Kostelecký, N. Russell, and **R. Tso**: *Bipartite Riemann-Finsler geometry and Lorentz violation*, [PLB](#) **716**, 470-474 (2012).
4. **R. Tso** and Q.G. Bailey: *Light-bending tests of Lorentz invariance*, [PRD](#), **84**, 085025 (2011).

CONFERENCE
PROCEEDINGS

1. **R. Tso**, M. Isi, Y. Chen, and L. C. Stein (2016): *Modeling the Dispersion and Polarization Content of Gravitational Waves for Tests of General Relativity*, [Proceedings of the Seventh Meeting on CPT and Lorentz Symmetry](#), pp. 205-208.
2. **R. Tso** and Q.G. Bailey (2010): *Gravitational Lensing and Light Bending as Tests of Lorentz Symmetry*, [Proceedings of the Fifth Meeting on CPT and Lorentz Symmetry](#), pp. 283-286.

INVITED
PRESENTATIONS

1. *Probing Relativity in the Next Era of Gravitational Wave Detectors*, JILA Seminar, CU, Boulder, CO USA, 2020.
2. *Tests of Relativity with Next Generation Detectors*, CGCA Seminar, University of Wisconsin, Milwaukee, WI USA, 2020.
3. *Gravitational Wave Astronomy: Sweeping Through the Spectrum*. TAPIR Seminar, Caltech, Pasadena, CA USA, 2019.
4. *Enhancements and Improved Tests of Relativity with Multi-band GW Observations*. CfA, Harvard, Cambridge, MA USA, 2019.
5. *Multi-band Gravitational Wave Astronomy*. LIGO Seminar, Caltech, Pasadena, CA USA, 2018.
6. *Constraining Beyond-GR Effects Through Gravitational Waves*. Lunch talk, University of Wisconsin, Madison, WI USA, Astronomy, 2017.
7. *Gravitational Waves: Searching for Flawed Relativity and Beyond*. Poster at January Board of Trustees Dinner, Caltech, Pasadena, CA USA, 2017.

8. *Modeling the Propagation & Polarization of Gravitational Waves to Test GR.* Lunch talk, University of Chicago, Chicago, IL USA, KICP, 2016.
9. *Testing GR with Gravitational Waves.* Science Speaker Series, ERAU, Prescott, AZ USA, 2015.
10. *Beyond Fisher: Testing General Relativity with Gravitational Waves.* LIGO Seminar, Caltech, Pasadena, CA USA, 2015.
11. *Detecting Violations of General Relativity.* Lunch talk, Cornell University, Ithaca, NY USA, Astronomy & Astrophysics, 2015.
12. *Testing General Relativity with Gravitational Waves.* Seminar talk, University of Connecticut, Storrs, CT USA, Physics, 2015.
13. *Exploring the Potential for Multi-messenger Astronomy with Black Hole-Neutron Star Binaries.* Columbia University, New York, NY USA, Astronomy & Astrophysics, 2013.

CONTRIBUTED
PRESENTATIONS

1. Presented at the 2020 APS April Meeting, virtual meeting due to COVID-19.
2. Presented at the 2019 APS April Meeting, Denver, CO USA. Supported by the APS DGRAV Travel Award.
3. Presented at 2018 GWPAW, College Park, MD USA. On behalf of the LVC for *Tests of GR with GW170817*. Supported by the Groce Travel Award.
4. Presented at the 2018 APS April Meeting, Columbus, OH USA. Supported by the APS DAP Travel Award.
5. Presented at the 2018 Pacific Coast Gravity Meeting, Caltech, Pasadena, CA USA.
6. Presented at the 2017 Aspen Center for Physics Winter Conference: *The Dawning Era of Gravitational-Wave Astrophysics*, Aspen, CO USA. Supported by a NSF award.
7. Presented at the 2017 APS April Meeting, Washington, DC USA. Supported by the Groce Travel Award.
8. Presented at the 21st International Conference on General Relativity and Gravitation, New York City, NY USA. Supported by the Groce Travel Award.
9. Presented at the Seventh Meeting on CPT and Lorentz Symmetry, Indiana University, Bloomington, IN USA.
10. Presented at 2016 Pacific Coast Gravity Meeting, California State University, Fullerton, CA USA.
11. Presented at 2015 Theoretical Astrophysics in Southern California Meeting, California State University, Fullerton, CA USA.
12. Presented at the 2011 APS April Meeting, Anaheim, CA USA. Supported by the APS Topical Group in Gravitation travel grant.

REFERENCES

Dr. Yanbei Chen (Caltech)
E-mail: yanbei@caltech.edu

Dr. Davide Gerosa (Birmingham)
E-mail: dgerosa@star.sr.bham.ac.uk

Dr. Daniel E. Holz (Chicago)
E-mail: dholz@uchicago.edu

Dr. Michele Zanolin (ERAU)
E-mail: zanolinm@erau.edu