



Spring 2022

- Home
- Announcements
- Syllabus
- Modules
- Assignments
- Quizzes
- People
- Grades
- Course Reserves
- Gradescope
- iClicker Registration
- LockDown Browser
- Media Gallery
- Zoom LTI PRO
- Academic Support
- Academic Integrity
- Library Resources
- Piazza
- Files
- Rubrics
- Discussions
- Pages
- Outcomes
- Collaborations
- Settings

# SIOG 239 - Special Topics in Geophysics - Rheology of the Lithosphere - Fialko [SP22]

Jump to Today Edit

## Rheology of the lithosphere - SIO 239

Discussion of topics related to time-dependent deformation phenomena in the Earth's crust and upper mantle; theory and observations of viscoelastic relaxation

Instructor: [Yuri Fialko](#); 321 IGPP; yfialko-at-ucsd.edu; Ph. 822-5028

Seminar course, 1 unit, S/U grade, reading assignments Time: Fri, 12:30-1:30 pm, 303 IGPP - Munk Conference Room

### SYLLABUS

Date	Topic	Reading	Discussion leader
01 APR	Introduction: Observations of transient deformation		YF
08 APR	Theory of viscoelasticity	Read: SIO 225 <i>Class notes</i> ; <a href="#">Chapter 12</a>	YF
15 APR	Rheology I	<a href="#">Jackson et al., New views on the structure and rheology of the lithosphere, Journal of the Geological Society, 2008</a>	YF
22 APR	Rheology II	<a href="#">EB Burav, Rheology and strength of the lithosphere, Marine and petroleum Geology, 2011</a>	Guilherme/Zeyu
29 APR	Rheology III	<a href="#">Bürgmann and Dresen, Rheology of the lower crust and upper mantle: Evidence from rock mechanics, geodesy, and field observations, Annu. Rev. Earth Planet. Sci., 36, pp.531-567, 2008</a>	Ellis/Jeremy
06 MAY	Post-seismic relaxation I	<a href="#">Zhao et al., Relaxation of Tibetan lower crust and afterslip driven by the 2001 Mw 7.8 Kokoxili, China, earthquake constrained by a decade of geodetic measurements, JGR, 2021</a>	Zeyu/Xiaoyu
13 MAY	Lake loading	<a href="#">Henriquet et al., Crustal rheology of southern Tibet constrained from lake-induced viscoelastic deformation, Earth and Planetary Science Letters, 506, pp.308-322, 2019.</a>	Jeena
20 MAY	Post-glacial rebound	<a href="#">Lau et al., Frequency Dependent Mantle Viscoelasticity via the Complex Viscosity: Cases From Antarctica, JGR, 126(11), p.e2021JB022622, 2021.</a>	Xiaoyu
27 MAY	Post-seismic relaxation II	<a href="#">Sobolev and Muldashev, Modeling seismic cycles of great megathrust earthquakes across the scales with focus at postseismic phase, Geochemistry, Geophysics, Geosystems, 18(12), pp.4387-4408, 2017</a>	Jeremy
03 JUN	Post-seismic relaxation III	<a href="#">Pollitz et al., Postseismic Relaxation Following the 2019 Ridgecrest, California, Earthquake Sequence, Bulletin of the Seismological Society of America, 112(2), pp.734-749, 2022.</a>	Jeena

### Course Status

Unpublish

Published

Import Existing Content

Add TAs

Course Start Checklist

Course End Checklist

eGrades Export

Import from Commons

Choose Home Page

View Course Stream

New Announcement

New Analytics

View Course Notifications

May 2022

24	25	26	27	28	29	30
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31	1	2	3	4

Course assignments are not weighted.

### Course Summary:

Date	Details	Due
------	---------	-----