

# KITP Program: The Physics of Elastic Films: from Biological Membranes to Extreme Mechanics

Coordinators: M. Deserno, R. Dimova, A. Košmrlj and C. Marques



## Week 1 (May 17-21): (Non-) Equilibrium fluctuations of fluid membranes and solid shells post questions in Slack channel [#films21-wk1-noneq-fluctuations](#)

Week 1	Time Zones (Start - End)*						Speaker	Topic
	PDT	EDT	CET	IST	CST	JST		
Monday, May 17	08:00 - 09:00	11:00 - 12:00	17:00 - 18:00	20:30 - 21:30	23:00 - 24:00	+1 day 00:00 - 01:00	<b>All participants</b>	Meet and Greet
Tuesday, May 18	08:00 - 10:00	11:00 - 13:00	17:00 - 19:00	20:30 - 22:30	23:00 - 01:00	+1 day 00:00 - 02:00		1 <sup>st</sup> discussion <b>Chair: Alex Levine</b>
							<b>Petia Vlahovska</b>	Membrane viscosity effects on the dynamics of fluid bilayers
Wednesday, May 19	09:00 - 10:00	12:00 - 13:00	18:00 - 19:00	21:30 - 22:30	+1 day 00:00 - 01:00	+1 day 01:00 - 02:00	<b>David Nelson</b>	Statistical mechanics of sheets, shells and cylinders
							<b>All participants</b>	Informal get-together on Gather.town
Thursday, May 20	08:00 - 10:00	11:00 - 13:00	17:00 - 19:00	20:30 - 22:30	23:00 - 01:00	+1 day 00:00 - 02:00		2 <sup>nd</sup> discussion <b>Chair: Cécile Sykes</b>
							<b>Patricia Bassereau</b>	Active membranes: where we are and where should we go
Friday, May 21	00:00 - 01:00	03:00 - 04:00	9:00 - 10:00	12:30 - 13:30	15:00 - 16:00	16:00 - 17:00	<b>Richard Pastor</b>	Ion-Dependent Clustering of PIP <sub>2</sub>
							<b>All participants</b>	Informal get-together on Gather.town

\*PDF: Pacific Daylight Time  
IST: India Standard Time

EDT: Eastern Daylight Time  
CST: China Standard Time (Beijing)

CET: Central European Time  
JST: Japan Standard Time

# KITP Program: The Physics of Elastic Films: from Biological Membranes to Extreme Mechanics

Coordinators: M. Deserno, R. Dimova, A. Košmrlj and C. Marques



## Week 2 (May 24-28): Extreme Mechanics

post questions in Slack channel [#films21-wk2-extreme-mechanics](#)

Week 2	Time Zones (Start - End)*						Speaker	Topic
	PDT	EDT	CET	IST	CST	JST		
Monday, May 24	08:00 - 09:00	11:00 - 12:00	17:00 - 18:00	20:30 - 21:30	23:00 - 24:00	+1 day 00:00 - 01:00	<b>All participants</b>	Meet and Greet
Tuesday, May 25	08:00 - 10:00	11:00 - 13:00	17:00 - 19:00	20:30 - 22:30	23:00 - 01:00	+1 day 00:00 - 02:00	<b>Sabetta Matsumoto</b>	1 <sup>st</sup> discussion <b>Chair: Chris Santangelo</b> Prescribing the elasticity of knits: stitch-by-stitch
							<b>Marcelo Dias</b>	On the mechanics of kirigami structures
Wednesday, May 26	09:00 - 10:00	12:00 - 13:00	18:00 - 19:00	21:30 - 22:30	+1 day 00:00 - 01:00	+1 day 01:00 - 02:00	<b>All participants</b>	Informal get-together on Gather.town
Thursday, May 27	08:00 - 10:00	11:00 - 13:00	17:00 - 19:00	20:30 - 22:30	23:00 - 01:00	+1 day 00:00 - 02:00	<b>Dominic Vella</b>	2 <sup>nd</sup> discussion <b>Chair: Eleni Katifori</b> Should we care about wrinkling?
							<b>Benny Davidovitch</b>	Confining sheets, shells, and membranes: Some open problems
Friday, May 28	00:00 - 01:00	03:00 - 04:00	9:00 - 10:00	12:30 - 13:30	15:00 - 16:00	16:00 - 17:00	<b>All participants</b>	Informal get-together on Gather.town

\*PDF: Pacific Daylight Time  
IST: India Standard Time

EDT: Eastern Daylight Time  
CST: China Standard Time (Beijing)

CET: Central European Time  
JST: Japan Standard Time

# KITP Program: The Physics of Elastic Films: from Biological Membranes to Extreme Mechanics

Coordinators: M. Deserno, R. Dimova, A. Košmrlj and C. Marques



## Week 3 (May 31-June 4): Frustrated solid sheets and fluid membranes

post questions in Slack channel [#films21-wk3-frustrated-sheets](#)

Week 3	Time Zones (Start - End)*						Speaker	Topic
	PDT	EDT	CET	IST	CST	JST		
								1 <sup>st</sup> discussion <b>Chair: Robin Selinger</b>
Tuesday, June 1	08:00 - 10:00	11:00 - 13:00	17:00 - 19:00	20:30 - 22:30	23:00 - 01:00	+1 day 00:00 - 02:00	<b>Shu Yang</b>	Preprogramming and reprogramming shape morphing of liquid crystal elastomers and composites
							<b>Arezki Boudaoud</b>	Frustration and fluctuations in tissue growth
Wednesday, June 2	09:00 - 10:00	12:00 - 13:00	18:00 - 19:00	21:30 - 22:30	+1 day 00:00 - 01:00	+1 day 01:00 - 02:00	<b>All participants</b>	Informal get-together on Gather.town
								2 <sup>nd</sup> discussion <b>Chair: Erwin Frey</b>
Thursday, June 3	08:00 - 10:00	11:00 - 13:00	17:00 - 19:00	20:30 - 22:30	23:00 - 01:00	+1 day 00:00 - 02:00	<b>Ed Lyman</b>	Surface viscosity and subdiffusion in membrane simulations
							<b>Paola Nardinocchi</b>	Diffusion-induced instabilities in soft solid sheets
Friday, June 4	00:00 - 01:00	03:00 - 04:00	9:00 - 10:00	12:30 - 13:30	15:00 - 16:00	16:00 - 17:00	<b>All participants</b>	Informal get-together on Gather.town

\*PDF: Pacific Daylight Time  
IST: India Standard Time

EDT: Eastern Daylight Time  
CST: China Standard Time (Beijing)

CET: Central European Time  
JST: Japan Standard Time

# KITP Program: The Physics of Elastic Films: from Biological Membranes to Extreme Mechanics

Coordinators: M. Deserno, R. Dimova, A. Košmrlj and C. Marques



## Week 4 (June 7-11): Mechanical stress propagation in fluid and solid membranes

post questions in Slack channel [#films21-wk4-stress-propagation](#)

Week 4	Time Zones (Start - End)*						Speaker	Topic
	PDT	EDT	CET	IST	CST	JST		
Monday, June 7	08:00 - 09:30	11:00 - 12:30	17:00 - 18:30	20:30 - 22:00	23:00 - 00:30	+1 day 00:00 - 01:30	<b>All participants</b>	Meet and Greet
								1 <sup>st</sup> discussion <b>Chair: Marino Arroyo</b>
Tuesday, June 8	08:00 - 10:00	11:00 - 13:00	17:00 - 19:00	20:30 - 22:30	23:00 - 01:00	+1 day 00:00 - 02:00	<b>Hiroshi Noguchi</b>	Calculation method of coefficients of bending energy and non-uniqueness of local stress field
							<b>Margarita Staykova</b>	Stress and adhesion in the morphing of lipid membranes
Wednesday, June 9	09:00 - 10:00	12:00 - 13:00	18:00 - 19:00	21:30 - 22:30	+1 day 00:00 - 01:00	+1 day 01:00 - 02:00	<b>All participants</b>	Informal get-together on Gather.town
								2 <sup>nd</sup> discussion <b>Chair: Michael Kozlov</b>
Thursday, June 10	08:00 - 10:00	11:00 - 13:00	17:00 - 19:00	20:30 - 22:30	23:00 - 01:00	+1 day 00:00 - 02:00	<b>Padmini Rangamani</b>	Coupling in-plane transport phenomena and membrane curvature
							<b>Martin Müller</b>	Local boundary constraints on free edges of unstretchable sheets
Friday, June 11	00:00 - 01:00	03:00 - 04:00	9:00 - 10:00	12:30 - 13:30	15:00 - 16:00	16:00 - 17:00	<b>All participants</b>	Informal get-together on Gather.town

\*PDF: Pacific Daylight Time  
IST: India Standard Time

EDT: Eastern Daylight Time  
CST: China Standard Time (Beijing)

CET: Central European Time  
JST: Japan Standard Time

# KITP Program: The Physics of Elastic Films: from Biological Membranes to Extreme Mechanics

Coordinators: M. Deserno, R. Dimova, A. Košmrlj and C. Marques



## Week 5 (June 14-18): Wetting of deformable sheets

post questions in Slack channel [#films21-wk5-wetting](#)

Week 5	Time Zones (Start - End)*						Speaker	Topic
	PDT	EDT	CET	IST	CST	JST		
Monday, June 14	08:00 - 09:30	11:00 - 12:30	17:00 - 18:30	20:30 - 22:00	23:00 - 00:30	+1 day 00:00 - 01:30	<b>All participants</b>	Meet and Greet
Monday, June 14	12:15 - 13:15	15:15 - 16:15	21:15 - 22:15	+1 day 00:45 - 01:45	+1 day 03:15 - 04:15	+1 day 04:15 - 05:15	<b>Jean-François Joanny</b>	<b>KITP blackboard lunch talk: Membranes and Interfaces: from cells to tissues</b>
Tuesday, June 15	08:00 - 10:00	11:00 - 13:00	17:00 - 19:00	20:30 - 22:30	23:00 - 01:00	+1 day 00:00 - 02:00	<b>Reinhard Lipowsky</b>	1 <sup>st</sup> discussion <b>Chair: Doug Holmes</b> Remodeling of biomembranes reveals the liaison of curvature and tension
							<b>Joseph Paulsen</b>	Sheets shaping liquids and liquids shaping sheets
Wednesday, June 16	09:00 - 10:00	12:00 - 13:00	18:00 - 19:00	21:30 - 22:30	+1 day 00:00 - 01:00	+1 day 01:00 - 02:00	<b>All participants</b>	Informal get-together on Gather.town
Thursday, June 17	08:00 - 10:00	11:00 - 13:00	17:00 - 19:00	20:30 - 22:30	23:00 - 01:00	+1 day 00:00 - 02:00	<b>Luca Monticelli</b>	2 <sup>nd</sup> discussion <b>Chair: Sarah Keller</b> Lipid droplet biogenesis: insight from molecular simulations
							<b>Abdou Rachid Thiam</b>	Lipid droplet nucleation
Friday, June 18	00:00 - 01:00	03:00 - 04:00	9:00 - 10:00	12:30 - 13:30	15:00 - 16:00	16:00 - 17:00	<b>All participants</b>	Informal get-together on Gather.town

\*PDF: Pacific Daylight Time  
IST: India Standard Time

EDT: Eastern Daylight Time  
CST: China Standard Time (Beijing)

CET: Central European Time  
JST: Japan Standard Time