Phase Transitions schedule, Spring 2022-23

Week	Dates	Торіся	Lecturer
	Wed 17:00-18:30	Wednesday 17:00-18:30	
1	March 1, 2023	1. Mean Field Theory Intro, phase transitions, MF theory, fluctuations, critical exponents, correlations, Ginzburg criterion	G
2	March 8, 2023	2. Wilsonian Renormalization Group I Blocking transformation, 1D Ising, RG flow, kinks and correlation length	М
3	March 15, 2023	SZÜNET	
4	March 22, 2023	3. Wilsonian Renormalization Group II higher dimensions, fixed points, critical surface, relevant/irrelevant operators, RG & phase diagrams	G
5	March 29, 2023	4. Critical theory. Correlations, scaling of free energy, finite size scaling	G
6	April 5, 2023	5. Field theory approach, (Gauss integrals, Wick's theorem?) Hubbard-Stratonovich trf., phi^4 theory, continuous RG flows, Wilson-Fisher fixed point	G
7	April 12, 2023	TAVASZI SZÜNET	
8	April 19, 2023	6. RG in field theory, nonlinear sigma models sigma models. (vector spin models, large N limit)	G
9	April 26, 2023	7. Quantum criticality I 1D TFIM, Jordan-Wigner trf., phase diagrams	М
10	May 3, 2023	8. Quantum criticality II quantum-classical mapping, correlation fn's	М
11	May 10, 2023	9. Topological phase transitions Quantum Hall effect, SSH model	G
12	May 17, 2023	10 Superfluidity and the XY model, Kosterlitz- Thouless transition in 2D.	М
13	May 24, 2023	11. Ground state theorems for quantum systems: Lieb-Schultz-Mattiss, Marshall, etc.	G
14	May 31, 2023	12. Large N methods, Spin liquids, flux phase	G
15	June 7, 2023		