

Modern Topics in Condensed Matter Physics – Summer Semester, 2020

- participation at all talks mandatory to obtain a certificate (Schein)!
- 30 minutes per talk, practice your talk to make sure you'll finish in time
- slides (power point etc.) preferred (blackboard not possible this semester)
- 2 talks per seminar timeslot
- prerequisites: basics of solid state physics, 2nd quantization
- each participant has to ask at least one question per talk
- reading material will be emailed to you by your advisor
- make sure to set up a first meeting with your advisor no later than three weeks before your scheduled talk
- try to read the material before the first meeting with your advisor
- give at least one practice talk, preferably with your advisor, before your actual talk

Schedule:

| Date | Name | Topic | Adv. | Reference |
|-------|----------------------|---|------|---|
| 25.5. | Matjaz Kebric | Antiferromag. in Fermi-Hubbard model | JvD | <i>Nature</i> 545 , 462 – 466 (2017). |
| 08.6. | Renhao Tao | Magnetic polarons in doped Hubbard | JvD | <i>Nature</i> 572 , 358 – 362 (2019). |
| 08.6. | Varun Chandrasekar | String patterns in doped Hubbard model | JvD | <i>Science</i> 365 , 251 – 256 (2019). |
| 15.6. | Luisa Eck | RVB, Rokhsar-Kivelson model | MP | <i>Phys. Rev. Lett.</i> 61 , 2376 (1988). |
| 15.6. | Oliver Franke | Kitaev's toric code | MP | arXiv:0904.2771 (Sec. 3). |
| 22.6. | Giovanni Canossa | Magnetic monopoles in spin-ice | FK | <i>Nature</i> 451 , 42-45 (2008). |
| 22.6. | Pol Alonso-Cuevillas | Exp. Signatures of quantum spin-ice | FK | <i>Nature Physics</i> 14 , 711-715 (2018). |
| 29.6. | Nicolas Sadoune | Kitaev's honeycomb model | JT | <i>Annals of Physics</i> , 321 , 111 (Secs. 1, 2). |
| 29.6. | Dim Sraidaris | Exp. signatures of Kitaev spin-liquids | MP | <i>Nature</i> 559 , 227–231(2018). |
| 13.7. | Daesik Kim | Moiré bands in twisted bilayer graphene | EW | <i>PNAS</i> 108 , 12233-12237 (2011). |
| 13.7. | Friederike Horn | Exp. observation of supercond. in TBG | AGI | <i>Nature</i> 556 , 43-50 (2018). |
| 20.7. | Julia Liebert | Haldane model | AGe | <i>Phys. Rev. Lett.</i> 61 , 2015 (1988). |

Advisors: Jan Von Delft (JvD)
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