2018 Physics Study

QFT & GR

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2018-08-09

Plan

1. Text Book

1) Candidates

Subject	Book Title	Author	Status
QFT	**Path Integrals in Field Theory**	**Ulrich Mosel**	Undetermined
QFT	**Introduction to Gauge Field Theory**	**Bailin & Love**	Undetermined
GR	**Relativity on Curved Manifolds**	**Felice & Clarke**	Selected

2) Pros & Cons of QFT Book

Mosel

1. Easy & precise notation
2. Great motivation to use path integral
3. Lack of advanced contents (like SSB)
4. More Resonable

Bailin & Love

1. No hard mathematics but still great
2. Have many advanced contents (even GUT)
3. Difficult notation and omit some explanations
4. More focusing on physics

3) Suggestions

- Start path integral with **Mosel**'s book
- If we finish **Mosel**, then discuss with **Bailin & Love**
- Yeji lecture **Mosel** / Friday
- TG lecture **Felice & Clarke** / Sunday

2. Specific Plan

1) Mosel

Part	Contents	Date
NRQM	1. The Path Integral in Quantum Theory	2018.08.17
NRQM	2. Perturbation Theory	2018.08.17
NRQM	3. Generating Functionals	2018.08.17
RQFT	4. Relativistic Field Theory	2018.08.24
RQFT	5. Path Integrals for Scalar Fields	2018.08.31
RQFT	6. Evaluation of Path Integrals	2018.08.31
RQFT	7. Transistion Rates and Green's Functions	2018.09.07
RQFT	8. Green's Functions	2018.09.07
RQFT	9. Perturbative ϕ^4 Theory	2018.09.14
RQFT	10. Green's Functions for Fermions	2018.09.21
RQFT	11. Interacting Fields	2018.09.21