

PHY 5669 : Quantum Field Theory B, Spring 2010

March 4th, 2010

Assignment # 4

(due Thursday March 18th, 2010)

1. Problem 59.2 of Srednicki's book.
2. Problem 62.1 of Srednicki's book.
3. Problem 62.2 of Srednicki's book.
4. Consider the one-loop diagrams with three external photons (and no external fermions) and show that the corresponding amplitude is zero. This is a particular case of *Furry's theorem*, for which you may want to solve Problem 58.2 (**extra credit**).
5. Problem 62.3 of Srednicki's book.
6. Problem 66.3 of Srednicki's book.

Extra Projects

These are suggested extra projects that will not be graded, but could be very beneficial to HEP graduate students. There is no deadline and you are welcome to come and discuss them with me at any time.

1. Problems 59.1 and 59.3 of Srednicki's book (suggestion: have a code do the tedious algebra!).
2. Expand on Section 50 by reading Section 60 of Srednicki's book and solve the problems therein.