

Physics III

Homework Three

College of the Atlantic

Due Friday 18 April, 2014

1. The the EPR experiment described in Chapter 6 and discussed in class, suppose that a right-going particle has the instruction set RRG. Complete the table on page 44 for this situation. What is the probability that the two dectectors flash different colors?
2. Repeat the above probelm for the case in which the left-going particle has the instruction set RGR.
3. Repeat the above probelm for the case in which the left-going particle has the instruction set GGG.
4. Styer, problem 6.2
5. Styer, problem 6.4
6. Consider the following instruction set for the GHZ experiment.

$$\begin{pmatrix} + & - & + \\ - & - & + \end{pmatrix} \quad (1)$$

Which rules (1–4 in the table on page 51), if any, are this instruction set consistent with?

7. Consider the following instruction set for the GHZ experiment.

$$\begin{pmatrix} + & + & + \\ + & + & + \end{pmatrix} \quad (2)$$

Which rules (1–4 in the table on page 51), if any, are this instruction set consistent with?

8. Consider the following instruction set for the GHZ experiment.

$$\begin{pmatrix} + & - & + \\ + & - & + \end{pmatrix} \quad (3)$$

Which rules (1–4 in the table on page 51), if any, are this instruction set consistent with?