
PROBLEM SET 5

Oct. 25 Colloquium: "Imaging the Embryonic Universe"

Prof. Andrew Lange, California Institute of Technology

3:30 pm, 101 Rowland Hall

1. What will your final report be on? To find possible topics, look at *More Things in Heaven and Earth: A Celebration of Physics at the Millennium*, *The New Physics*, or Scientific American. Write your answer on a separate sheet of paper.
2. Eisberg and Resnick problem 11.19.
3. Eisberg and Resnick problem 11.20.
4. Eisberg and Resnick problem 12.21.
5. Eisberg and Resnick problem 12.22(a).
6. How does the transition temperature T_C depend on the number of particles N if $E=pc$ for Bose condensation? (Hint: You don't have to evaluate any integrals. Just try scaling, i.e., make the variables in the integral dimensionless. Your answer should be of the form $T_C \sim N^\alpha$. Find α .)