

Physics 106b  
Problem set number 8  
Due Wednesday, March 10, 1999

**Notes about course:**

- Note that there is a “Ph106” box in room 335, which can be used for submitting homework sets.
- TAs:

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- Web page URL:  
<http://www.cithep.caltech.edu/~fcp/ph106/>

Reading: Jackson Chapter 3, sections 3.12 and 3.13; Chapter 4, sections 4.1 and 4.2.

38. Jackson problem 3.6.
39. Jackson problem 3.9.
40. Jackson problem 3.10.
41. Jackson problem 4.1.
42. A dipole is fixed at the origin, with dipole moment in the  $x - y$  plane, at an angle of  $\theta_1$  to the  $x$ -axis. Another dipole is located at  $x = L$  on the  $x$ -axis, and is free to rotate (but not translate). What is the equilibrium position of the second dipole?