For these questions, use the simulation "The two-dimensional infinite circular well" (2D Circular Well) in the QuVis HTML5 collection.

1) Have a play with the simulation for a few minutes, getting to understand the controls and displays. Note down three things about the controls and displayed quantities that you have found out.

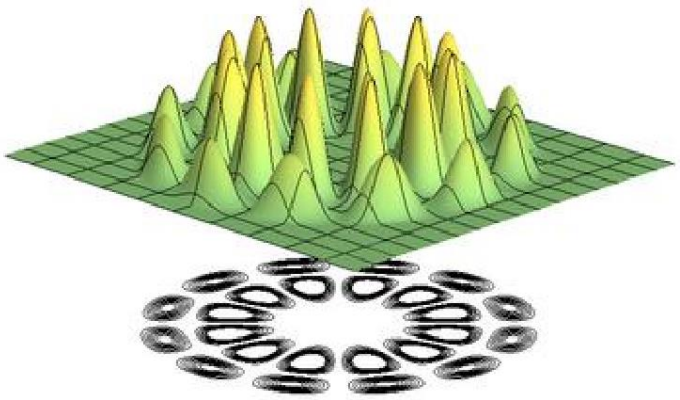
2 a) How can you determine the quantum number n_r from the probability density graph?

b) How can you determine the quantum number m from the probability density graph?

c) How can you determine the angular momentum L_z from the probability density graph?

d) Which states have zero rotational energy? Note that the rotational energy is proportional to L_z^2 .

3) What can you say about the angular momentum of this state, given the probability density graph below?



4) Which of the Challenges did you find most difficult and why? Explain how you solved this challenge. If none of the Challenges were difficult, choose the one you found most interesting and explain how you solved it.