

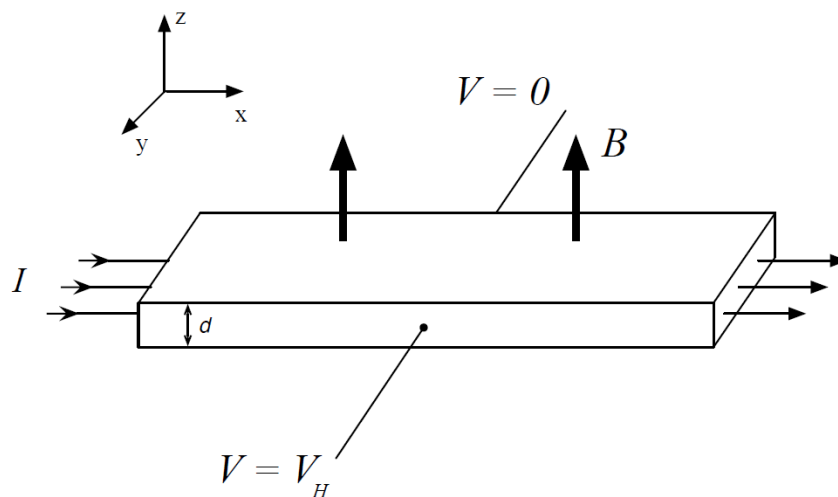


# Physics Department Seminar

April 27, 2012  
11:00 am Physical Science room 105

## The Quantum Hall Effect

Ms. Rebecca Rolapp



**Abstract:** Classically, if one places a current across a sample, and a magnetic field perpendicular, a potential difference will result in the third perpendicular, this is the Hall effect. At very low temperatures and high magnetic fields in the two-dimensional electron system the quantum Hall effect is observed. As the magnetic field is increased, the Hall resistance exhibits plateaus at specific values of resistance. The spacing depends only upon the fine structure constant and the speed of light. Further, these quanta of resistance are independent of material properties