

# Spin - orbit - coupled BoseEinstein condensates

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## **Abstract**

Spin-orbit coupling is a particularly omnipresent effect in quantum systems. It appears in the spin-Hall effect, topological insulators and many other hot topics. A good way to study it is its realization in a Bose-Einstein condensate, which allows a relatively precise control over the relevant parameters. In my talk I plan to introduce spin-orbit coupling, and show how it is realized in a Bose-Einstein condensate. Further I might look at the appearance of vortices and in particular a half-quantum vortex state.