

Teaching particle physics to teacher students

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Since Norwegian high school teachers are required to teach particle physics, it is important to give them as good an understanding of the topic as possible. Since also many students who do not venture into more advanced physics courses, show an interest in particle physics, we face a challenge in how to teach these topics in a non-technical fashion. I will discuss aspects of coming to grips with the notion of particles, which is causing a lot of confusion in quantum mechanics, especially how to diffuse the “particle-wave” confusion. Here the idea of particles as some kind of energy-quanta, as first discussed by Einstein, plays an important role. In addition, gauge theory is a vital component in understanding particle physics at a deeper level, and especially understanding the Higgs mechanism at all. Here a simple but accurate analogy will be presented that can do this without resorting to too complicated mathematics.

Summary

Primary author: BOMARK, Nils-Erik

Presenter: BOMARK, Nils-Erik

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