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**Speaker:** Astrid Blin

**Title:** *Electromagnetic interactions with light baryons in covariant ChPT*

**Date:** 18 November 2016

**Time:** 15:00

**Place:** Minkowski room

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### **Abstract**

We study the low-energy behaviour of baryons subjected to external electromagnetic fields, using fully covariant SU(3) ChPT with the explicit inclusion of spin-3/2 degrees of freedom. The processes studied are Compton and electron scattering off baryon targets, as well as meson photoproduction. On the one hand, the goal of the study of scattering reactions is to extract clean information about observables such as polarizabilities, electric dipole moments, charge radii and electromagnetic densities. On the other hand, the analysis of meson-production cross sections allows one to get information about LECs, resonances and the convergence behaviour of ChPT. We predicted some hyperon electromagnetic properties for the first time, and also achieved the reproduction of the threshold neutral pion photoproduction data up to photon energies above 200 MeV. Furthermore, we extracted an upper limit for the branching ratios of some CP-violating decays, giving them a much stronger constraint than experimentally possible so far.