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### Pion-photon reactions and chiral dynamics in Primakoff processes at COMPASS

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With the COMPASS experiment at CERN, pion-photon reactions are investigated via the Primakoff effect, implying that high-energetic pions react with the quasi-real photon field surrounding the target nuclei.

The production of a single hard photon in such a pion scattering, at lowest momentum transfer to the nucleus, is related to pion Compton scattering. From the measured cross-section shape, the pion polarisability is determined. The COMPASS measurement is in contradiction to the earlier dedicated measurements, and rather in agreement with the theoretical expectation from chiral perturbation theory.

In the same experimental data taking, reactions with neutral and charged pions in the final state are measured and analyzed. At low energy in the pion-photon centre-of-momentum system, these reactions are governed by chiral dynamics and contain information relevant for chiral perturbation theory. At higher energies, resonances are produced and their radiative coupling is investigated.

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