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Hyperfine splitting in muonic hydrogen and two-photon exchange on nucleons OLEKSANDR TOMALAK, University of Kentucky — Future precise measurements of the ground state hyperfine splitting (HFS) in muonic hydrogen by CREMA and FAMU collaborations as well as at J-PARC will provide strict constraints on the low-energy proton structure. Two-photon exchange (TPE) enters as a leading proton structure correction to HFS. Exploiting the precise 1S HFS measurements in electronic hydrogen, I will extract the TPE correction and make an accurate prediction for the HFS in muonic hydrogen. Moreover, I will present TPE correction to the Lamb shift and HFS on the neutron inside a nucleus and contrast it with the correction on the proton.

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