

# Contributions to the 1s hyperfine structure of light muonic atoms

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Precision laser measurements of transition energies in muonic hydrogen, deuterium,  $^3\text{He}$  and  $^4\text{He}$  have provided high-precision measurements of the respective nuclear radii. These results have also led to precision tests of QED and fundamental physics. These results depend, for nuclei with spin, on the precision of the evaluation of the hyperfine structure. Several measurements of the hyperfine structure of muonic hydrogen are being prepared [1-3] to test theoretical calculations and possible physics beyond the standard model. In this talk I will give results on the hyperfine structure of the 1s state of light muonic atoms, extending previous work on the 2s level [4, 5] and evaluate some higher-order vacuum polarization corrections. I will study the influence of the nuclear model, and of the magnetic moment distribution compared to the electric one. These effects will also be considered for deuterium and  $^3\text{He}$ .

## References

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