

Laser spectroscopy of the (1s2 2s2p) 3P0 - 3P1 level splitting in Be-like krypton

Mittwoch, 1. Juni 2022 14:30 (5 Minuten)

[E135 -resubmission]

Our proposal was first presented to the G-PAC in 2010 (rank A, 21 shifts). It was resubmitted for re-evaluation in 2017 (rank A-, 21 shifts). We had a “test beamtime”(shared with S467) at the ESR from the 20th until the 25th February 2020. It was 13½ shifts long, but effectively we could use only 12 shifts. The ion beam was isotope 86Kr, not 84Kr.

We have made great progress in terms of laser and detector development, as has been demonstrated in May 2021 (12C3+ at ESR), and are therefore even better prepared for experiment E135. Now, we can tune the laser frequency over a broad range and have much more laser power in the UV. Also the much improved ion bunch - laser pulse timing and the data analysis will strongly contribute to measuring the (1s2 2s2p) 3P0 - 3P1 level splitting in Be-like krypton. For these reasons, we will resubmit proposal E135 to the G-PAC in 2022.

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Sitzung Einordnung: ESR