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Polarization of the Lyman-alpha x-ray line emitted by highly charged hydrogen-like ions excited by electron impact[1] DMITRY FURSA, CHRIS BOSTOCK, IGOR BRAY, Curtin University — The polarization of x-ray lines emitted by highly charged hydrogen-like ions excited by electron impact plays an important role in plasma diagnostics. A recent review by Beieresrofer [1] highlighted that there are systematic discrepancies between theory and experiment for the polarization of such lines. Using the relativistic convergent close-coupling method we have calculated the polarization of the Lyman-alpha x-ray line emitted by hydrogen-like Ti (21+) , Ar (17+) and Fe (25+) ions excited by electron impact. We find [2] that account of Breit relativistic corrections is important to resolve the discrepancy between experiment and theoretical calculations.

[1] P. Beiersdorfer, Physica Scripta T134 (2009) 014010
[2] C. Bostock, D. Fursa, I. Bray, Phys Rev A 80 (2009) 052708

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Dmitry Fursa
Curtin University

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