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Contribution ID: 3456 Type: **Poster Competition (Graduate Student) / Compétition affiches (Étudiant(e) 2e ou 3e cycle)**

(G*) (POS-7) Search for Light Bosons with King and Super-King Plots Optimized for Li^+ .

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The King plot technique widely used for isotopes of heavy atoms is extended to light heliumlike ions by taking second differences to eliminate large mass polarization corrections [1]. The effect of a hypothetical electron-neutron interaction propagated by light bosons is included and a comprehensive survey of all second-King plot transitions for all states of Li^+ up to $n = 10$ and $L = 7$ is presented in order to find the ones most sensitive to new physics due to light bosons. The sensitivity is found to be comparable to that for the recently studied case of Yb^+ .

[1] G.W.F. Drake, Harvir S. Dhindsa and Victor J. Marton, Phys. Rev. A 104, L060801 (2021).

Authors: DRAKE, Gordon (University of Windsor); DHINDSA, Harvir; MARTON, Victor

Presenters: DHINDSA, Harvir; MARTON, Victor

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