Incorporating thermal effects into alpha decay half-life calculations for nucleosynthesis investigations

100

95

6

85

80

Proton number (Z)

D. F. Rojas-Gamboa¹, N. G. Kelkar¹, and O. L. Caballero²

¹Universidad de los Andes, Bogotá, Colombia ²University of Guelph, Guelph, Ontario, Canada

Extreme stellar phenomena, such as neutron star mergers, contribute to the production of the heaviest elements in the universe.

Alpha decay happens faster in hot environments compared to what we see on Earth.

A smaller set of nuclei do not release their energy by emitting the alpha particle immediately.

Both faster and slower decays could leave an imprint on the light observed from these stellar environments.

