HYDROGEN ATOM IN SPACES WITH COMPACTIFIED EXTRA DIMENSIONS AND POTENTIAL DEFINED BY GAUSS' LAW

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We explore the consequences of additional spatial dimensions for the stability of the non-relativistic hydrogen atom. We used a local modification of the Hardy inequality and the KLMN theorem to prove that the $4D$ hydrogen atom in a compactified universe is stable for $Z < 1$, i.e. with the same critical charge as in the non-compactified version.