

Abstract Submitted  
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**Electromagnetic Nature of Nuclear Energy** BERNARD SCHAEFFER, Retired — As it is known since two millenaries, there is an attraction between an electric charge and a neutral object. Coulomb found the fundamental laws of electricity two centuries ago. After one century of nuclear physics, the fundamental laws of the strong force are still ignored. It has been found that electric and magnetic Coulomb's laws alone, without any hypothetical centrifugal force, are able to predict the binding energy of the simplest bound nucleus, the deuteron  ${}^2H$  with a precision of 4 %. The nuclear potential is given by the formula:

$$U_{em}^{2H}/A = \frac{e^2}{4\pi\epsilon_0} \left( \frac{1}{r_{np} + a} - \frac{1}{r_{np} - a} \right) + \frac{\mu_0 |\mu_n \mu_p|}{4\pi r_{np}^3} \quad (1)$$

This potential shows a horizontal inflection point where the electric and magnetic forces are equilibrated, coinciding with the experimental deuteron binding energy. Similar results have been obtained for the  $\alpha$  particle  ${}^4He$  where the electric attractive potential is four times larger than that of  ${}^2H$  while the magnetic repulsion is only 1.5 times larger and the  ${}^4He$  binding energy six times larger than that of the deuteron. These results, prove the electromagnetic nature of the nuclear energy without the usual assumptions.

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