EINSTEIN'S MASS-ENERGY EQUIVALENCE

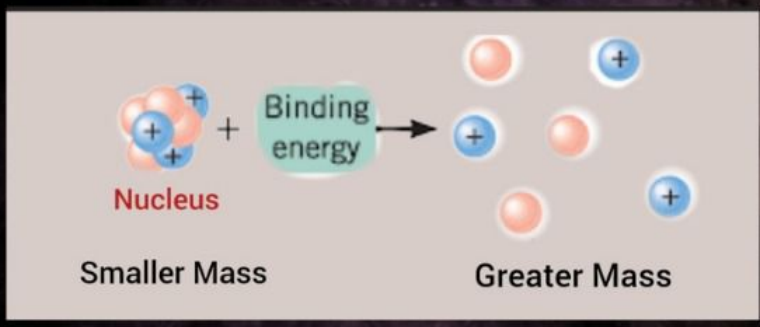
$$E = mc^2$$

"DOES THE INERTIA OF A BODY DEPENDS UPON ITS ENERGY CONTENT?"

EINSTEIN FIRST DERIVED MASS-ENERGY EQUIVALENCE IN HIS 1905 ANNUS MIRABILIS PAPER , PUBLISHED IN THE JOURNAL ANNALEN DER PHYSIK .

RAISING THE TEMPERATURE OF AN OBJECT INCREASES ITS MASS. THE WORLD'S PRIMARY MASS STANDARD FOR THE KILOGRAM, MADE OF PLATINUM AND IRIDIUM. IF ITS TEMPERATURE IS ALLOWED TO CHANGE BY 1 °C, ITS MASS CHANGES BY 1.5 PICOGRAMS.

THE MASS OF THE NUCLEUS IS SLIGHTLY LESS THAN THE SUM OF THE INDIVIDUAL MASSES OF ITS CONSTITUENT PARTICLES. THIS MASS DEFICIT IS CONVERTED INTO THE BINDING ENERGY THAT HOLDS THE NUCLEUS TOGETHER, FOLLOWING $E=MC^2$



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