

Answer on Question #67617 – Physics – Mechanics | Relativity

Question:

A body from a point in the gravitational field is moving slowly to infinity. What kind of energy will be stored in the body? Derive the relevant formula.

Answer:

In this process, the potential energy will be stored. We can find a value of stored energy:

$$W = \int_R^{+\infty} \frac{GM}{r^2} dr = -\frac{GM}{r} \Big|_R^{+\infty} = \frac{GM}{R}, \text{ where } R \text{ is the initial distance from force center.}$$

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