Is energy a physical thing

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Take kinetic energy, it"s the movement of something - now does that actually exist as a "substance" for lack of a word, or is it just when objects move, so we"re describing what they"re doing?

Same with potential energy - does it exist or is it just a description of what could happen to an object?

Could anyone tell me what energy really is? I searched for it, and some people said that energy doesn"t exist physically and it is not fundamental, but it is a relationship between other fundamental things, and there is not energy by itself, so it should be related to something else.

"What energy is" is a philosophical question. It turns out its impossible for science to talk about what "reality" is like, other than to say that science forms models which have an "energy" term in them and they seem to be pretty good predictors. If you"re interested in that line of reasoning, I highly recommend looking into the philosophy of science.

However, we can find energy as a meaningful thing in our models. One of the foremost ways of modeling our reality for scientific purposes is in the idea of "action." The idea of action is formed from this question:

This is a very abstract concept, and it"s okay if it doesn"t make 100% sense when you first work with it. But what makes it important was that we came to this concept of Action without invoking forces or energy, or any of those other terms. We just pointed out that the paths objects take tend to be the one which minimizes action across the entire path. Or, more generally, we determined that you could find a Lagrangian for which the "correct" path is always found by solving this optimization problem that minimizes the action. Actually figuring out a Lagrangian function which does this is another matter, what matters is that one exists!

Now should you accept this declaration that there always exists a Lagrangian function such that the correct path of objects is always found by minimizing the action? Perhaps not. Don"t take my word for it. Science is an empirical art, not a purely mathematical art. It"s the observation of scientists over the centuries that say "We can always describe the motion of particles this way!"

Now once you have this, we then can invoke one of the most powerful mathematical formalisms in all of physics: Nother"s Theorem. This theorem shows that if you have a system which is described by this optimization problem, this minimization of action, and it has a continuous symmetry, then there is some conserved value. This is neat because it takes some very abstract mathematical concepts, like continuous symmetries and action, and ties it directly to the idea of conserved values.

This continuous time symmetry must have an associated conserved value, by Nother"s theorem. We call that conserved value "energy." And if you actually go through all the fancy Calculus of Variations, you find that the thing that we conserve when we conserve energy is precisely what we told you was "energy" all along.

Well, maybe it"s not important to know what energy is, as much as it is to know what energy can do. The typical definition of energy is that energy is the capacity to do work. If something has energy, it has the capacity to move things, lift things, heat things, and so forth. The other thing that is important to know is that energy can never be "created" or "destroyed". In other words, total energy is always conserved. It simply morphs into different forms as it is transferred between things in the form of either heat or work.