BBC

Standard model of particle physics

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PROFESSOR JOHN ELLIS

So the particles of the standard model include the electron, and then there's a couple of other heavier particles very much like it - called mu and tau.

Other particles include neutrinos and quarks, up, down, charm, strange, top and bottom quarks. Photons, gluons and W and Z are force-carrying particles. Now, as I've written it, these particles wouldn't have any mass, but there is the missing link, the infamous Higgs boson, which gives masses to these particles and completes the standard model.

Now, what supersymmetry says is that in addition to these particles, everyone has a partner or mirror particle, if you like, which we denote by twiddle, so there's a selectron, there's a smuon, there's a stau,

there's a photino, there's a gluino, sneutrinos...

DAVID MITCHELL

Supersymmetry, or SUSY if you're in the know, is, according to its devotees, a rather beautiful notion that not only explains an awful lot of problems in physics and cosmology, but also provides us with a dark matter particle, perhaps, if it's real, as opposed to just a nice idea. And so far, it's been as elusive as, well, as dark matter itself.