Subject: The future of computers (quantum computing)
Posted by frijud on Fri, 18 Jun 2004 21:18:12 GMT
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The whole quantum world is really very interesting. At the quantum level, things happen that don't make sense in the newtonian way of thinking.

For example, take Blazor's "spin" idea. When an atom changes spin (from up to down), it just becomes the other spin. It does not slow down spinning in one direction and start spinning the other, it just changes spin, instantly.

We have an instrument in the lab that uses this idea. In general terms, it is called tunneling microsocpy. An electron is on a surface. When you put a piece of metal close to the surface nothing happens because the electron cannot jump between the surface and the piece of metal. However, there is a finenite probability that the electron will "tunnel" and get to the piece of metal. The electron cannot jump, so it tunnels, which basically means that it just stops existing on the surface and starts existing on the piece of metal. The electron never traveled the physical distance between the two parts, it just was there. This is why it is called tunneling. Some speculate that it tunneled thought another universe. The probability of tunneling is basied on what material the surface is made out of, thus it is a usefull tool. Really interesting stuff.

I could go on...but I will shut up now...