by nonlinear processes that we can define as generation and self-organization, forming stable and more complex systems, able to use and transform the energy flux at their disposal.

The beta decay, for instance, is today considered in a very reductive way: Practically the thinking is that a neutron, emitting an electron, turns into a proton, and in addition, gamma radiation and other things are produced. In reality, Enrico Fermi, the Italian scientist who first built the atomic pile in 1946, had much more advanced ideas, not based on the concept of a simple "division" of the neutron into a proton and an electron. He assumed an action carried out by the neutron on itself to transform itself, producing such a concentrated energy, beyond the gamma rays, as to generate an electron. In other words, the electron does not decouple from the neutron but is produced by the work done by the neutron to turn into a proton.

So-called elementary particles, too, therefore, seem not to be at all elementary, but turn out to be complex systems able to transform themselves and do work.

Instead of trying to rationalize physical processes where, as we have seen, the laws of conservation of energy are not respected, by inventing "ephemeral" particles, it would be much more useful to start from the acquired fact that such a law is no longer respected and revise therefore the concepts of energy and work used in physics, reformulating them in such a way that they are coherent with the evolution and self-organization aspects, more and more evident in such processes.

It is worth recalling, in this context, that the Italian school of physics, developed in the middle of the last century at Pisa University by figures like Prof. Enrico Betti and Felice Beltrami with the contribution of the great German physicist Bernhard Riemann, developed the fundamental principles of electrodynamics exactly from this standpoint, in an overt polemic against Maxwell's mechanistic conceptions.

Betti and Beltrami in particular concentrated their attention on those anomalous, non-linear "phenomena" of physical processes, describing thus in an accurate way the generation, in an electrodynamic fluid, of helix-like movements that locally increase the flux-density of the system. These self-organizing processes were then revealed and studied in the second half of the present century by Winston Bostick and other scientists in high-temperature plasma physics, and represent an interesting line of research to achieve thermonuclear fusion.

The teaching of those great scientists is clear: We must not be afraid of opening a crisis in theoretical physics, rather the opposite: Science progresses exactly through such revolutions. We have everything to gain from dumping inadequate theories, and if there is today a field of physics where theories cannot hold, this is the field of particle physics.

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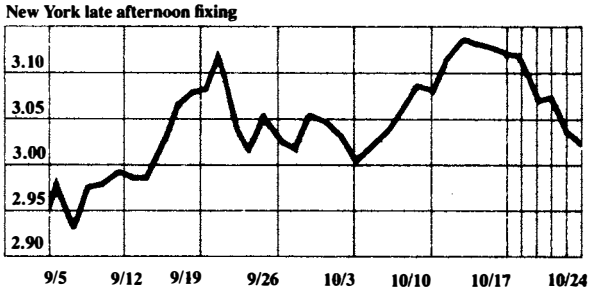
# Currency Rates

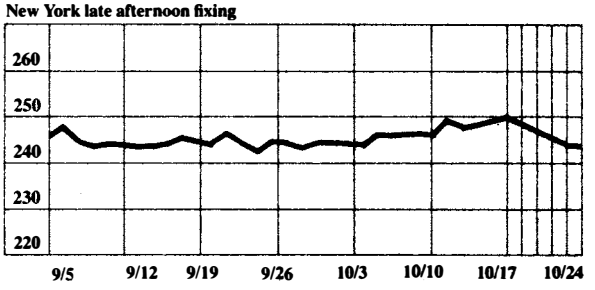
## The dollar in deutschemarks

New York late afternoon fixing



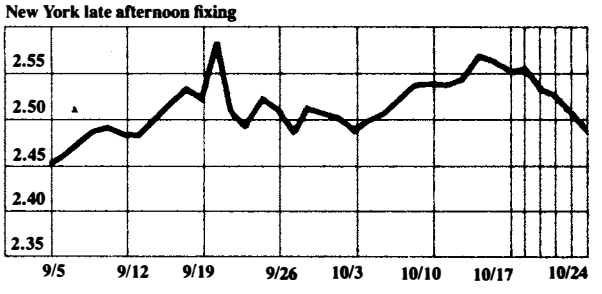

## The dollar in yen

New York late afternoon fixing




## The dollar in Swiss francs

New York late afternoon fixing




## The British pound in dollars

New York late afternoon fixing