

Baveye: Why a mechanistic theory of soils is crucially important: Another line of supportive arguments exists, seldom invoked in soil science

General comments

What the author argues about is rather obvious. Having a theoretical basis for performing experimental studies makes them more structured and efficient. This paper can hopefully inspire some scientists to take some time to develop theories before embarking on extensive experimental studies. A problem I see here is the weak mathematical training soil scientists have. As an example, to get from the many conventional discrete pool models of soil organic matter transformations to models based on process understanding raises the level of mathematical knowledge considerably (see papers on a continuous description rather than discrete ones, e.g. Bosatta, E. Ågren, G I. 1991. Dynamics of carbon and nitrogen in the organic matter of the soil: A generic theory. *The American Naturalist* 138: 227-245). A possible solution to this problem could be to invite physicists to participate in soil science studies.