

least-action principle both the structure of field theories generally and specific theories having to do with electrodynamics and the mechanics of electrically polarized media, continuum mechanics and gravity. General considerations of the conservation of momentum and energy pass quickly by; then the author takes up more particular matters: the electromagnetic-field-dipole-moment interaction, for example, or the momentum of the gravitational field in general relativity. In the final chapter Soper considers dissipative processes, where effects such as viscosity and heat flow enter into the theories.

Techniques of Applied Quantum Mechanics. J. P. Killingbeck. 224 pp. Butterworths, Borough Green, Kent, U.K., 1975. £9.00

The author takes as his main theme, he tells us, the view that "... a few ideas (mainly from linear space theory) can go a long way." Even a fragmentary listing of topics serves to demonstrate that there are many ideas and approaches explored in this volume. He discusses, in a section on modern mathematical concepts, such matters as the propositional calculus, sigma rings, dense sets and Banach spaces. A section on operator theory includes completely continuous operators and hypervirial theorems, and in the group-theory section one finds Lie groups and their generators, the Cartan-Weyl basis and space groups.

The Origin of the Planets. I. P. Williams. 108 pp. Hilger, London, 1975. £8.00

In this slim volume the author presents a descriptive review of theories advanced during the "Age of Reason" and after to explain the formation of our sun's family. The tidal theories of James Jeans and Harold Jeffreys and the accretion theory of Hannes Alfvén appear here, as do many others and a catalogue of objections to them. Cartesian, Kantian and Laplacian ideas about the formation of the solar system claim the author's attention before he summarizes the main approaches and concludes that only two types of theories deserve immediate consideration: the floccule theory of W. H. McCrea and the various explanations that follow Immanuel Kant's vision.

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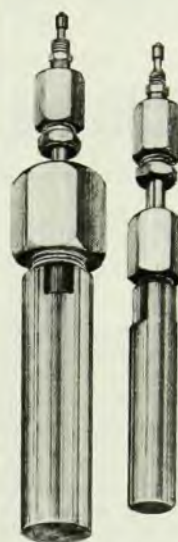
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