

Lie Algebras and Quantum Mechanics and Vector Bundles in Mathematical Physics and their relationship to the other works of Robert Hermann.

We shall use the following code, to be able to refer to Professor Hermann's books conveniently.

LG	<i>Lie groups for physicists</i> , Benjamin, N.Y., 1966.
DG	<i>Differential geometry and the calculus of variations</i> , Academic Press, N.Y., 1968.
LA	<i>Lie algebras and quantum mechanics</i> , Benjamin, N.Y., 1969.
FA	<i>Fourier analysis on groups and partial wave analysis</i> , Benjamin, N.Y., 1969.
VB-1, VB-2	<i>Vector bundles in mathematical physics</i> . I, II, Benjamin, N.Y., 1970.
MP-1, MP-2	<i>Lectures on mathematical physics</i> . I, II, Benjamin, N.Y., 1970.
PS	<i>Geometry, physics and systems</i> , Dekker, N.Y., 1973
PA	<i>Some physical aspects of Lie group theory</i> , mimeographed, Université de Montréal, 1972.

TABLE 1.

(In addition, Professor Hermann has announced plans for a series of volumes entitled *Interdisciplinary mathematics* which continue his program.)

Before we comment on these works, and on LA and VB in particular, it might be helpful to list some of the *major* topics found in these books. We do this since topics are often repeated in various contexts and degrees of development.

Calculus of variations	DG(part 2), VB-1(Ch. 2), LA(Ch. V), PS(Ch. III, IV)
Classical limit of quantum mechanics	VB-2(Ch. V, VII)
Classical mechanics (geometry of symplectic structures, etc.)	DG(Ch. 33), MP-1(Ch. II, IV), LA(Ch. II), VB-1(Ch. V), VB-2(Ch. II), PS(Ch. II, III)
Constrained systems	DG(Ch. 12, 33), LA(Ch. II)
Current algebras	LA(Ch. III, IV)
Differential geometry (basic theory)	DG(part III)