

**Schwartz, Laurent**

**Semi-martingales à valeurs dans des espaces d'applications  $C^\infty$  entre espaces vectoriels. I. (Semi-martingales with values in spaces of  $C^\infty$ -maps between vector spaces. I.).** (French)

[Zbl 0617.60050](#)

C. R. Acad. Sci., Paris, Sér. I 305, 31-35 (1987).

Let  $E, F, G$  be finite dimensional vector spaces,  $\Phi$  a semi-martingale with values in  $C^\infty(E; F)$ ,  $\Psi$  a semi-martingale with values in  $C^\infty(F; G)$ ,  $X$  a semi-martingale with values in  $E$ . We prove the following three theorems:

1.  $\Phi(X)$  is a semi-martingale with values in  $F$ ; 2.  $\Phi \circ \Psi$  is a semi-martingale with values in  $C^\infty(E; G)$ ; 3. If  $\Phi$  is invertible,  $\Phi^{-1}$  is a semi-martingale with values in  $C^\infty(F; E)$ . This theorem 3 will be proved in part II [see the following entry, [Zbl 0617.60051](#)].

**MSC:**

[60H10](#) Stochastic ordinary differential equations (aspects of stochastic analysis)

[60G48](#) Generalizations of martingales

[60J60](#) Diffusion processes

Cited in **1** Review

**Keywords:**

[semi-martingale](#)