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Nota di contenuto	Intro -- Introduction -- Smooth manifolds and F-smooth spaces -- Smooth manifolds -- F-smooth spaces -- F-smooth spaces -- F-smooth subspaces -- F-smooth maps -- Cartesian product of F-smooth spaces -- Smooth manifolds as F-smooth spaces -- Systems of maps -- Smooth systems of smooth maps -- Smooth systems of smooth maps -- Smooth structure of (μ mumu SSSSSS,) -- Smooth tangent prolongation of (μ mumu SSSSSS,) -- F-smooth systems of smooth maps -- F-smooth systems of smooth maps -- F-smooth tangent prolongation of (μ mumu SSSSSS,) -- F-smooth vs smooth systems of maps -- Systems of sections -- Smooth systems of smooth sections -- Smooth systems of smooth sections -- Smooth structure of (μ mumu SSSSSS,,) -- Smooth lifted fibred manifold -- F-smooth systems of smooth sections -- F-smooth systems of smooth sections -- F-smooth structure of μ mumu SSSSSS -- F-smooth tangent prolongation of (μ mumu SSSSSS, ,) -- F-smooth differential operators -- F-smooth vs smooth systems of sections -- Systems of connections -- Smooth systems of smooth connections -- Smooth systems of smooth connections -- Smooth universal connection -- F-smooth systems of connections -- F-smooth connections -- F-smooth connections -- F-smooth connections in the linear case -- Applications -- Introduction to Covariant Quantum Mechanics -- System of observed quantum

connections -- Quantum dynamics -- F-smooth sectional quantum fibred set -- F-smooth sectional quantum bundle -- The pre-Hilbert sectional quantum bundle -- Schrodinger connection -- List of Symbols -- Index -- Bibliography.

Sommario/riassunto

Title in English: Smooth and F-smooth systems with applications to Covariant Quantum Mechanics We review the geometric theory of smooth systems of smooth maps, of smooth systems of smooth sections of a smooth double fibred manifold and of smooth systems of smooth connections of a smooth fibred manifold. Moreover, after reviewing the concept of F-smooth space due to A. Froelicher, we discuss the F-smooth systems of smooth maps, the F-smooth systems of fibrewisely smooth sections of a smooth double fibred manifold, the F-smooth systems of fibrewisely smooth connections of a smooth fibred manifold and of F-smooth connections of an F-smooth system of fibrewisely smooth sections. Further, we discuss three applications of the general geometric theory, which are taken in the framework of Covariant Quantum Mechanics. Namely, we discuss the smooth upper quantum connection, the F-smooth sectional quantum bundle and the Schroedinger operator regarded as an F-smooth connection of the F-smooth sectional quantum bundle.
