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| Nota di contenuto | C[infinity]-rings -- The C[infinity]-ring C[infinity](X) of a manifold X -- C[infinity]-ringed spaces and C[infinity]-schemes -- Modules over C [infinity]-rings and C[infinity]-schemes -- C[infinity]-stacks -- Deligne-Mumford C[infinity]-stacks -- Sheaves on Deligne-Mumford C [infinity]-stacks -- Orbifold strata of C[infinity]-stacks. |
| Sommario/riassunto | "If X is a manifold then the R-algebra C[infinity](X) of smooth functions C : X [right arrow] R is a C[infinity]-ring. That is, for each smooth function f : Rn [right arrow] R there is an n-fold operation ]Phi]f : C [infinity](X)n [right arrow] C[infinity](X) acting by [Phi]f : (c1, . . . , cn) [right arrow] f(c1, . . . , cn), and these operations [Phi]f satisfy many natural identities. Thus, C[infinity](X) actually has a far richer structure than the obvious R-algebra structure. We explain the foundations of a version of algebraic geometry in which rings or algebras are replaced by C[infinity]-rings. As schemes are the basic objects in algebraic geometry, the new basic objects are C[infinity]-schemes, a category of geometric objects which generalize manifolds, and whose morphisms generalize smooth maps. We also study quasicoherent sheaves on C [infinity]-schemes, and C[infinity]-stacks, in particular Deligne-Mumford C[infinity]-stacks, a 2-category of geometric objects generalizing orbifolds. Many of these ideas are not new: C[infinity]-rings and C[infinity]-schemes have long been part of synthetic differential geometry. But we develop them in new directions. In Joyce (2014, 2012, 2012 preprint), the author uses these tools to define d- |

manifolds and d-orbifolds, 'derived' versions of manifolds and orbifolds related to Spivak's 'derived manifolds' (2010)"--