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Título: Lectures On Duflo Isomorphisms In Lie Algebra And Complex Geometry

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Duflo isomorphism first appeared in Lie theory and representation theory. It is an isomorphism between invariant polynomials of a Lie algebra and the center of its universal enveloping algebra, generalizing the pioneering work of Harish-Chandra on semi-simple Lie algebras. Later on, Duflo's result was refound by Kontsevich in the framework of deformation quantization, who also observed that there is a similar isomorphism between Dolbeault cohomology of holomorphic polyvector fields on a complex manifold and its Hochschild cohomology. The present book, which arose from a series of lectures by the first author at ETH, derives these two isomorphisms from a Duflo-type result for Q-manifolds.

All notions mentioned above are introduced and explained in the book, the only prerequisites being basic linear algebra and differential geometry. In addition to standard notions such as Lie (super)algebras, complex manifolds, Hochschild and Chevalley-Eilenberg cohomologies, spectral sequences, Atiyah and Todd classes, the graphical calculus introduced by Kontsevich in his seminal work on deformation quantization is addressed in details.

The book is well-suited for graduate students in mathematics and mathematical physics as well as for researchers working in Lie theory, algebraic geometry and deformation theory.