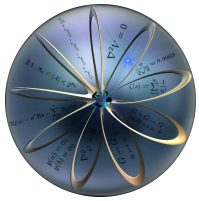

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module algebra

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Let H be a bialgebra. A **left H-module algebra** is a unital algebra A which is a left H-module with action $h \triangleright a$ satisfying

$$h \triangleright (ab) = \sum (h_{(1)} \triangleright a)(h_{(2)} \triangleright b), \quad h \triangleright \mathbb{1}_A = \varepsilon(h)\mathbb{1}_A, \tag{1}$$

for all $h \in H$ and $a, b \in A$.

There is a dual notion of a H-comodule coalgebra.

Example 1
Let H be a Hopf algebra. Then H is itself a H-module algebra for the adjoint action $g \triangleright h = \sum g_{(1)} h S(g_{(2)})$.