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ON COALGEBRAS AND TYPE TRANSFORMATIONS

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Abstract

We show that for an arbitrary $\mathcal{S}et$-endofunctor T the generalized membership function given by a sub-cartesian transformation μ from T to the filter functor $\mathbb{F}$ can be alternatively defined by the collection of subcoalgebras of constant T-coalgebras. Sub-natural transformations ε between any two functors S and T are shown to be sub-cartesian if and only if they respect μ. The class of T-coalgebras whose structure map factors through ε is shown to be a covariety if ε is a natural and sub-cartesian mono-transformation.

Keywords: coalgebra, endofunctor, filter functor, cartesian transformation, crisp.

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