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ON THE STRUCTURE OF SPLIT INVOLUTIVE REGULAR HOM–LIE ALGEBRAS

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Abstract. We study the strucure of arbitrary split involutive regular Hom-Lie algebras. By developing techniques of connections of roots for this kind of algebras, we show that such an algebra L is of the form $L = U + \sum_{[j]\in\Lambda/\sim} I_{[j]}$ with U a subspace of the involutive abelian subalgebra H and any $I_{[j]}$, a well described involutive ideal of L, satisfying $[I_{[j]}, I_{[k]}] = 0$ if $[j] \neq [k]$. Under certain conditions, in the case of L being of maximal length, the simplicity of the algebra is characterized and it is shown that L is the direct sum of the family of its minimal involutive ideals, each one being a simple split involutive regular Hom-Lie algebra.

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