Let \((\mathfrak{g}, [\cdot, \cdot], \delta_\mathfrak{g})\) be a fixed Lie bialgebra and \(V\) be a vector space. In this paper, we introduce the notion of a unified bi-product of \((\mathfrak{g}, [\cdot, \cdot], \delta_\mathfrak{g})\) by \(V\) and give a theoretical answer to the extending structures problem, i.e. how to classify all Lie bialgebraic structures on \(E = \mathfrak{g} \oplus V\) such that \((\mathfrak{g}, [\cdot, \cdot], \delta_\mathfrak{g})\) is a Lie subbialgebra up to an isomorphism of Lie bialgebras whose restriction on \(\mathfrak{g}\) is the identity map. Moreover, several special unified bi-products are also introduced. In particular, the unified bi-products when \(\dim V = 1\) are investigated in detail.

**Keywords:** Lie bialgebra, extending structure.

**MSC:** 17A30, 17B62, 17B65, 17B69.