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**Julio-José Moyano-Fernández\***, moyano@uji.es. *Duality and syzygies for semimodules over numerical semigroups.*

Let  $\Gamma = \langle \alpha, \beta \rangle$  be a numerical semigroup.

In this article we consider the dual  $\Delta^*$  of a  $\Gamma$ -semimodule  $\Delta$ ; in particular we deduce a formula that expresses the minimal set of generators of  $\Delta^*$  in terms of the generators of  $\Delta$ . As applications we compute the minimal graded free resolution of a graded  $K[t^\alpha, t^\beta]$ -submodule of  $K[t]$ , and we investigate the structure of the selfdual  $\Gamma$ -semimodules, leading to a new way of counting them. This is a joint work with Jan Uliczka. (Received February 11, 2015)