On Weyl modules for the symplectic group

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Abstract

Let V_k be the Weyl module of dimension $\binom{2n}{k} - \binom{2n}{k-2}$ for the group $G = \mathrm{Sp}(2n, \mathbb{F})$ arising from the k-th fundamental weight of the Lie algebra of G. Thus, V_k affords the grassmann embedding of the k-th symplectic polar grassmannian of the building associated to G. When $\mathrm{char}(\mathbb{F}) \neq 0$, the G-module V_k can be reducible.

In this talk we will investigate the structure of the module V_k mainly focusing on a geometric description of it. In particular, we will be interested in the first appearance of reducibility of V_k for a given $h = n - k$.