

**Meeting:** 1001, Evanston, Illinois, SS 19A, Special Session on Algebraic Representations and Deformations

1001-20-110      **Lex E. Renner\*** (lex@uwo.ca), Department of Mathematics, Middlesex College, University of Western Ontario, London, Ontario n6a5b7, Canada. *Flat Monoids and Deformations of a Semisimple Group*. Preliminary report.

Associated with any reductive algebraic monoid  $M$  is its *abelisation*

$$p : M \rightarrow A.$$

$p$  is the universal morphism from  $M$  to an affine, torus embedding monoid. Following Vinberg, we call  $M$  *flat* if  $p$  is a flat morphism with reduced and irreducible fibres. If  $M$  is flat with unit group  $G$ , then

$$p : M \rightarrow A$$

is a  $G_0 \times G_0$ -equivariant deformation of the semisimple (commutator) group  $G_0 = (G, G)$ .

Flat monoids arise naturally from certain hyperplane arrangements in the root lattice of a maximal torus of  $G_0$ . The special fibre of Vinberg's *enveloping monoid*  $Env(G_0)$ , has been analysed in detail.

Each flat monoid depicts the representation ring of a semisimple group as a deformation of the “dual colored cone” of a certain affine spherical variety. (Received August 17, 2004)