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**Flavia Colonna\*** (fcolonna@gmu.edu), Department of Mathematical Sciences, George Mason University, 4400 University Drive, Fairfax, VA 22030, and **Robert F Allen**. *Isometric composition operators on the Bloch space of a bounded symmetric domain*. Preliminary report.

Let  $f$  be a complex-valued holomorphic function defined on a bounded symmetric domain  $D$  in  $\mathbb{C}^n$ . For  $z \in D$  and  $u, v \in \mathbb{C}^n$ , let  $(\nabla f)(z)u = \langle (\nabla f)(z), \bar{u} \rangle$ , where  $(\nabla f)(z)$  is the gradient of  $f$  at  $z$  and  $\langle u, v \rangle = \sum_{k=1}^n u_k \bar{v}_k$ , and denote by  $H_z(u, \bar{v})$  the Bergman metric on  $D$ , that is, the positive definite bilinear form which is invariant under right composition of automorphisms of  $D$ . The function  $f$  is said to be *Bloch* if  $\beta_f = \sup_{z \in D} Q_f(z) < \infty$ , where

$$Q_f(z) = \sup_{u \in \mathbb{C}^n \setminus \{0\}} \frac{|(\nabla f)(z)u|}{H_z(u, \bar{u})^{1/2}}.$$

The set  $\mathcal{B}$  of Bloch functions on  $D$  is a Banach space under the norm  $\|f\|_{\mathcal{B}} = |f(0)| + \beta_f$ . Let  $\phi$  be a holomorphic self-map on a bounded symmetric domain  $D$ . In this talk, we give some necessary conditions for the composition operator  $C_\phi : f \mapsto f \circ \phi$  to be an isometry on  $\mathcal{B}$  when  $D$  is a Cartan classical domain. We also give a sufficient condition for functions defined on any bounded symmetric domain which allows us to construct non-trivial examples of isometries in the case when  $D$  has the unit disk as a factor. (Received January 16, 2007)