The diastatic exponential of a symmetric space

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Abstract: Let (M, g) be a real analytic Kähler manifold. We say that a smooth map $\mathrm{Exp}_p : W \to M$ from a neighborhood W of the origin of T_pM into M is a *diastatic exponential* at p if it satisfies

$$(d\mathrm{Exp}_p)_0 = \mathrm{id}_{T_pM},$$

$$D_p(\mathrm{Exp}_p(v)) = g_p(v, v), \forall v \in W,$$

where D_p is Calabi's diastasis function at p (the usual exponential $\exp_p$ obviously satisfied these equations when D_p is replaced by the square of the geodesics distance d_p^2 from p). In this seminar we describe the diastatic exponential in the case of an Hermitian symmetric space of noncompact type.