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**Holomorphic retractions and boundary Berezin transforms.** (English) Zbl 1176.47026  
*Ann. Inst. Fourier* 59, No. 2, 641-657 (2009).

Summary: In [Ann. Inst. Fourier 51, No. 4, 1101–1133 (2001; Zbl 0989.47027)], the first two authors showed that the convolution of a function  $f$  continuous on the closure of a Cartan domain and a  $K$ -invariant finite measure  $\mu$  on that domain is again continuous on the closure, and, moreover, its restriction to any boundary face  $F$  depends only on the restriction of  $f$  to  $F$  and is equal to the convolution, in  $F$ , of the latter restriction with some measure  $\mu_F$  on  $F$  uniquely determined by  $\mu$ . In the present article, we give an explicit formula for  $\mu_F$  in terms of  $F$ , showing, in particular, that for measures  $\mu$  corresponding to the Berezin transforms the measures  $\mu_F$  again correspond to Berezin transforms, but with a shift in the value of the Wallach parameter. Finally, we also obtain a nice and simple description of the holomorphic retraction on these domains which arises as the boundary limit of geodesic symmetries.

**MSC:**

- [47B38](#) Linear operators on function spaces (general)
- [17C27](#) Idempotents, Peirce decompositions
- [53C35](#) Differential geometry of symmetric spaces
- [46J15](#) Banach algebras of differentiable or analytic functions,  $H^p$ -spaces
- [46E22](#) Hilbert spaces with reproducing kernels (= (proper) functional Hilbert spaces, including de Branges-Rovnyak and other structured spaces)
- [32M15](#) Hermitian symmetric spaces, bounded symmetric domains, Jordan algebras (complex-analytic aspects)

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**Keywords:**

[Berezin transform](#); [Cartan domain](#); [convolution operator](#)

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