

## $Q_p$ -spaces on bounded symmetric domains

Jonathan Arazy and Miroslav Engliš\*

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**Abstract.** We generalize the theory of  $Q_p$  spaces, introduced on the unit disc in 1995 by Aulaskari, Xiao and Zhao, to bounded symmetric domains in  $\mathbf{C}^d$ , as well as to analogous Moebius-invariant function spaces and Bloch spaces defined using higher order derivatives; the latter generalization contains new results even in the original context of the unit disc.

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### 1. Introduction

Let  $\mathbf{D}$  be the unit disc in the complex plane  $\mathbf{C}$ . For  $-\infty < p < \infty$ , a holomorphic function  $f$  is said to belong to the space  $Q_p$  if

$$(1) \quad \sup_{x \in \mathbf{D}} \int_{\mathbf{D}} |f'(z)|^2 \left(1 - \left| \frac{x-z}{1-\bar{x}z} \right|^2\right)^p dz < \infty,$$

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