1003-17-523   **Gail Letzter*** (`letzter@math.vt.edu`), McBryde 534, Mathematics Department, Virginia Tech, Blacksburg, VA 24061. *Invariant Differential Operators for Quantum Symmetric Spaces.*

A quantum analog of Harish-Chandra's map is described in the maximally split case. This map induces an isomorphism between the ring of quantum invariant differential operators and the ring of invariants of a Laurent polynomial ring. A quantum Helgason theorem is also obtained: The image of the center under this Harish-Chandra map is the entire invariant ring if and only if the underlying irreducible symmetric pair is not one of four exceptional types. Proofs depend on finding a particular nice basis for the quantum invariant differential operators, which also relate to Macdonald polynomials. (Received September 19, 2004)