1024-17-139   **Gail Letzter*** (`gletzter@verizon.net`) and **Jasper V Stokman**. *Macdonald Difference Operators and Harish-Chandra Series.*

We analyze the centralizer of the Macdonald difference operator in an appropriate algebra of Weyl group invariant difference operators. We show that it coincides with Cherednik's commuting algebra of difference operators via an analog of the Harish-Chandra isomorphism. Analogs of Harish-Chandra series are defined and realized as solutions to the system of basic hypergeometric difference equations asociated to the centralizer algebra. These Harish-Chandra series are then related to the both Macdonald polynomials and Chalykh's Baker-Akhiezer functions. (Received January 05, 2007)