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Olav K Richter* (richter@unt.edu), University of North Texas, Department of Mathematics, 1155 Union Circle #311430, Denton, TX 76203-5017, and **Kathrin Bringmann** and **Charles H Conley**. *Jacobi forms over complex quadratic fields via the cubic Casimir operators*. Preliminary report.

I will report on a new approach to Jacobi forms over complex quadratic fields, which is recent joint work with K. Bringmann and C. Conley.

We prove that the center of the algebra of differential operators invariant under the action of the Jacobi group over a complex quadratic field is generated by two cubic Casimir operators, which we compute explicitly. In the spirit of Borel, we consider Jacobi forms over complex quadratic fields that are also eigenfunctions of these Casimir operators, a new approach in the complex case. Theta functions and Eisenstein series provide standard examples. In addition, we introduce an analog of Kohnen's plus space for half-integral weight modular forms over $K = Q(i)$, and provide a lift from it to the space of Jacobi forms over $K = Q(i)$. (Received September 02, 2008)