1021-47-76 **Michael Lacey**, Georgia Institute of Technology, and **Erin Terwilleger*** (`terwilleger@math.uconn.edu`), University of Connecticut, Department of Mathematics, U-3009, Storrs, CT 06040. *Hankel operators in several complex variables and product BMO.*

$H^2(\otimes_1^n \mathbb{C}_+)$ denotes the n parameter product Hardy space of square integrable functions analytic in each variable separately. Let $P^{\oplus}$ and $P^{\ominus}$ denote the natural projections of $L^2(\otimes_1^n \mathbb{C}_+)$ onto $H^2(\otimes_1^n \mathbb{C}_+)$ and $\overline{H^2(\otimes_1^n \mathbb{C}_+)}$ respectively. A Hankel operator with symbol b is the linear operator from $H^2(\otimes_1^n \mathbb{C}_+)$ to $\overline{H^2(\otimes_1^n \mathbb{C}_+)}$ given by $H_b\varphi := P^{\ominus}\overline{b}\varphi$. We show that

$$\|H_b\| \simeq \|P^{\oplus} b\|_{BMO(\otimes_1^n \mathbb{C}_+)},$$

where the norm on the right hand side is product BMO, the dual to product H^1, as identified by S.-Y. Chang and R. Fefferman. This fact has well known equivalences in terms of commutators and the weak factorization of product H^1. The proof we present is inductive and is influenced by the proof of Ferguson and Lacey in the two parameter case. One is able to obtain a lower bound in terms of a new BMO space with one less parameter. Then one is able to bootstrap up to the full BMO using a particular form of a lemma of Journé which occurs implicitly in the work of J. Pipher. (Received August 24, 2006)