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1326 Stevenson Center, Nashville, TN 37240, and **Igor Pak**. *Weighted branching formulas for the  
hook lengths.*

The famous hook-length formula is a simple consequence of the branching rule for the hook lengths. While the Greene-Nienhuis-Wilf probabilistic proof is the most famous proof of the rule, it is not completely combinatorial, and a simple bijection was an open problem for a long time. In this talk, we will see an elegant bijective argument that proves a stronger, weighted analogue of the branching rule. Variants of the bijection prove seven other interesting formulas. Another important approach to the formulas is via weighted hook walks; some results in this area will also be discussed. (Received January 05, 2010)