1062-33-112   **Ira M. Gessel*** (`gessel@brandeis.edu`), Department of Mathematics, MS 050, Brandeis University, Waltham, MA 02453. *The WZ method and zeta function identities.* Preliminary report.

There are several interesting formulas that give quickly converging series for generating functions for the zeta function, due to Almkvist, Borwein, Bradley, Granville, Koecher, Leshchiner, and Rivoal. For example, Koecher's formula is

$$\sum_{k=0}^{\infty} \zeta(2k+3)x^{2k} = \sum_{n=1}^{\infty} \frac{(-1)^{n+1}}{n^3\binom{2n}{n}} \left(\frac{1}{2} + \frac{2}{1-x^2/n^2} \right) \prod_{k=1}^{n-1} \left(1 - \frac{x^2}{k^2} \right).$$

Khodabakhsh and Tatiana Hessami Pilehrood used the WZ method of Wilf and Zeilberger to prove some of these formulas. I will explain how the WZ proofs of these identities are closely related to classical hypergeometric series identities, and how this connection allows us to generalize them. (Received August 02, 2010)