962-11-1064 **Rick Kreminski*** (kremin@boisdarc.tamu-commerce.edu), Department of Mathematics, Texas A&M University - Commerce, Commerce, TX 75429. *Generalized Stieltjes constants γ_k for non-integral k.* Preliminary report.

The Stieltjes constants γ_k are up to normalization the coefficients in the Laurent series of the Riemann ζ function, centered at $s=1$: if we define $h(s)=\zeta(s)-\frac{1}{s-1}$, then h extends to an entire function and $h(s)=\sum_{k=0}^{\infty}\frac{(-1)^k\gamma_k}{k!}(s-1)^k$. Stieltjes showed that the coefficients can be given by $\gamma_k=\lim_{n\mapsto\infty}(\sum_{j=1}^{n}\frac{log^k j}{j^k}-\frac{log^{k+1}n}{k+1})$ for $k=1,2,\ldots$. We conjecture that for positive, real non-integral k this formula yields Weyl-fractional derivative values of h (evaluated at $s=1$). That is, we conjecture that, up to sign, $h^{(r)}(1)=\gamma_r$ for real $r>0$. We present numerical evidence for this conjecture and a related conjecture for the Riemann-Hurwitz zeta function $\zeta(s,a)$. (Received October 03, 2000)