1077-05-2803 **Filip Cools**, **Jan Draisma**, **Sam Payne** and **Elina Robeva*** (erobeva@math.harvard.edu), 1 Oxford Street, Cambridge, MA 02138. *A Tropical Proof of the Brill-Noether Theorem.*

We exhibit Brill-Noether general graphs in every genus g, confirming a conjecture of Baker and giving a new proof of the Brill-Noether theorem. We achieve this by the following construction. Let Γ be a chain of g loops with generic edge lengths and let $\rho = g - (r+1)(g-d+r)$. If $\rho < 0$, we show that Γ has no effective divisors of degree d and rank r. If $\rho \geq 0$, then Γ has no effective divisors of degree d and rank r containing $(r+g+1)v_0$, where v_0 is a chosen fixed point on Γ. (Received September 22, 2011)