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Hang Huang* (hhuang235@tamu.edu), 1601 Holleman Dr Apt 1013, College Station, TX 77840,
and **Mateusz Michalek** and **Emanuele Ventura**. *Vanishing Hessian and Wild Polynomials*.

Notions of ranks and border rank abound in the literature. Polynomials with vanishing hessian and their classification is also a classical problem. Motivated by observation of Ottaviani, we will discuss why when looking at concise polynomials of minimal border rank, being wild, i.e. their smoothable rank is strictly larger than their border rank, are the same as having vanishing Hessian. The main tool we are using here is the recent work of Buczynska and Buczynski relating the border rank of polynomials and tensors to multigraded Hilbert scheme. From here, we found two infinite series of wild polynomials and we will try to describe their border varieties of sums of powers, which is an analog of the variety of sums of powers. (Received September 13, 2020)