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Vinh An Pham* (vapnnc@mail.missouri.edu), Mathematics Department, University of Missouri-Columbia, Columbia, MO 65201, and **Steven Dale Cutkosky**. *Valuation Semi-Groups and Generating Sequences on 2-dimensional Local Rings*.

We will discuss the construction of a generating sequence of valuations on 2-dimensional local rings and some applications. We give a complete classification of the valuation semigroups attained on regular local rings of dimension two, and their relationship with the residue field extension of the valuation ring. This generalizes a classical theorem for the case when the residue field of the ring is algebraically closed. We also give some examples of more complex semigroups attained on normal two dimensional local rings, and give some applications to ramification. (Received February 13, 2012)