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*The Subtree Polynomial*

The subtree polynomial of a tree  $T$  is the generating polynomial for the number of subtrees of  $T$ . The subtree polynomial encodes a variety of interesting parameters of the tree including the total number of subtrees, the mean subtree order, and the independence number. We present a sharp constant bound on the roots of the subtree polynomial of a tree. We then discuss root-free and root-dense intervals of the real line. Finally, we give a short proof of the fact that the path (star, respectively) has coefficient-wise least (greatest, respectively) subtree polynomial. This is joint work with Jason Brown.