学术报告：Quadratic starlike trees

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报告摘要：Harary and Schwenk in [Harary, F., Schwenk, A.J.: Which graphs have integral spectra? in Graphs and Combinatorics. Lecture Notes in Math, vol. 406. Springer, Berlin (1974)] proposed to classify integral graphs about 40 year ago. This problem initiates a significant investigation among algebraic graph theorists. It turns out to be extremely hard although this problem is easy to state. One can refer to [Lu Lu, Qiongxiang Huang and Xueyi Huang, Integral Cayley graphs over dihedral groups, J Algebr Comb, (2017)] for the summary of the researches of integral graphs. Here we extend the notion of integral graph and define the quadratic graph, that is a graph whose eigenvalues are integral or quadratic algebraic integral.

In this talk, we will introduce some notion and method to identify the the quadratic graphs, and focus to determine nine infinite families of quadratic starlike trees, which are just all the quadratic starlike trees including integral starlike trees. Thus the quadratic starlike trees are completely characterized, and moreover the display expressions for the characteristic polynomials of the quadratic starlike trees are also given.

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