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**Arthur L.B. Yang\*** ([yang@nankai.edu.cn](mailto:yang@nankai.edu.cn)), Center for Combinatorics, Nankai University, Tianjin, 300071, Peoples Rep of China. *The real-rootedness of Kazhdan-Lusztig polynomials of matroids*. Preliminary report.

In analogy with the classical Kazhdan-Lusztig polynomials in representation theory, Elias, Proudfoot and Wakefield associated to every matroid a polynomial with integer coefficients. They conjectured that the Kazhdan-Lusztig polynomial of a matroid has only non-negative coefficients, and its coefficients form a log-concave sequence with no internal zeros. Gedeon, Proudfoot and Young further conjectured that the Kazhdan-Lusztig polynomial of a matroid has only non-positive real zeros. This talk will address some progress on the real-rootedness of the Kazhdan-Lusztig polynomials for some specific families of matroids, including fan matroids and thagomizer matroids. This talk is based on joint works with Alice Gao, Linyuan Lu, Matthew Xie and Philip Zhang. (Received July 11, 2017)