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EXTREMAL OCTAGONAL CHAINS WITH RESPECT TO THE SPECTRAL RADIUS*

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Abstract. Octagonal systems are tree-like graphs comprised of octagons that represent a class of polycyclic conjugated hydrocarbons. In this paper, a roll-attaching operation for the calculation of the characteristic polynomials of octagonal chain graphs is proposed. Based on these characteristic polynomials, the extremal octagonal chains with n octagons having the maximum and minimum spectral radii are identified.

Key words. Octagonal chains, Spectral radius, Extremal graphs.

AMS subject classifications. 05C50, 15A42.

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