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Partial-Tuality Polynomials, Part 2. Preliminary report.

Given partial-tuality operator for a single ribbon e , the effect of that operator on the type (proper, untwisted loop, twisted loop) of edge e and its dual edge e^* is given. This analysis is used to show that if A is a spanning tree of the ribbon graph G , all partial-tualities with respect to A have one vertex (a bouquet), except Petrie duality \times . Partial-*, \times polynomials are given for six families of ribbon graphs derived from the cycle in the sphere or projective plane. A recursion is given for the partial- \times polynomials of the linear family of ladders L_n and these polynomials are shown to be log-concave. The partial- \times polynomial for L_n is shown to be $(1+z)(1+3z+4z^2)^n$. This same formula also applies to any graph obtained from a single edge by adding n trisected parallel edges, a subfamily of series-parallel networks. (Received September 11, 2020)