FURTHER RESULTS ON THE CRAIG-SAKAMOTO EQUATION∗

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Abstract. In this paper, necessary and sufficient conditions are stated for the Craig-Sakamoto equation \( \det(I - sA - tB) = \det(I - sA) \det(I - tB) \) to hold for all scalars \( s, t \in \mathbb{C} \). Moreover, spectral properties for matrices \( A \) and \( B \) that satisfy this equation are investigated.

Key words. Determinant, Characteristic polynomial, Craig-Sakamoto equation, Bilinear form.

AMS subject classifications. 15A15, 15A18, 15A63.

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