

# Geometry of uniqueness varieties for a three-point Pick problem in $\mathbb{D}^3$

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Motivated by the recent progress of research on extending holomorphic functions from subvarieties of classical domains, and its connections to the 3-point Pick interpolation, we study a special class of two-dimensional algebraic subvarieties  $M_\alpha$  of the unit tridisc, defined as the sets

$$\{(z_1, z_2, z_3) \in \mathbb{D}^3 : \alpha_1 z_1 + \alpha_2 z_2 + \alpha_3 z_3 = \bar{\alpha}_1 z_2 z_3 + \bar{\alpha}_2 z_1 z_3 + \bar{\alpha}_3 z_1 z_2\}.$$

We shall describe several geometric properties of  $M_\alpha$  and show the biholomorphic equivalence between any two surfaces  $M_\alpha$  and  $M_\beta$ , where the triples  $\alpha$  and  $\beta$  satisfy the so called triangle inequality.