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Unity and Priority in Descartes's Algebra and Geometry

Prof. Cathay LIU
(Yale NUS College)

Abstract: Is Descartes .F N" geometrical emphasis found in his mathematical practice a consequence of his inability to escape from the classical geometric tradition and their unsolved problems? Or does he instead make a great mathematical advance towards a pure mathematics by allowing algebraic numeric entities that are independent of our special intuitions? The answer, I argue, is neither. Taking the issues in reverse, I argue that, Descartes does not free numbers from spatial intuitions because his algebraic entities must be represented geometrically. To show why this is true, I explain how Descartes conceives the relationship between algebra and geometry. This reading, based largely on the Regulae, also offers an account of how Descartes N" mathematical practices are a consequence of his metaphysical and epistemological views concerning the nature of mathematics. Hence, it would be a mistake to think Descartes N" mathematical views are orthogonal to his philosophical views, or that his mathematical practices are merely due to vestiges of the classical tradition.

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京都大学文学部東館2階257号室「KUASU多目的室」
(KUASU Meeting Room 257, Faculty of Letters East Bldg., Kyoto University)
（参加無料・当日参加歓迎）　TEL: 075-753-2805