

This paper focuses on monotone Löwner operators in Euclidean Jordan algebras and their applications to the symmetric cone complementarity problem (SCCP). We prove necessary and sufficient conditions for locally Lipschitz Löwner operators to be monotone, strictly monotone and strongly monotone. We also study the relationship between monotonicity and operator-monotonicity of Löwner operators. As a by-product of our results, we establish a new class of C-functions for SCCP, which is an extension of the Mangasarian class of NCP-functions for the nonlinear complementarity problem, and present some characterizations of the C-functions for SCCP under certain assumptions.