Recent Results on Hopf Type Lemma and Wiener Criterion

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The Hopf-Oleinik lemma (or the boundary point principle) and the Wiener criterion are two significant results in elliptic and parabolic PDEs. In the first part of my talk, I will discuss some recent work on the Hopf type lemma for divergence form equations and double divergence form equations (i.e., adjoint equations for non-divergence form equations). Some applications will also be mentioned. In the second part, I will present results concerning the Wiener criterion for nondivergence form or double divergence form equations.

Based on several joint work with Seick Kim (Yonsei University), Boyan Sirakov (PUC-Rio), Seongmin Jeong (Hanyang University), and Dong-ha Kim (Chung-Ang University).