Vladimir Peller (Michigan State University):

Title: Functions of perturbed normal operators.

Abstract:

We study conditions on functions f of two variables, under which the fact that N_1 and N_2 are normal operators and the operator $N_1 - N_2$ is small implies that the operator $f(N_1) - f(N_2)$. Is small. By "small", we can mean different things: the norm is small, the operator belongs to a certain operator ideal, the ideal norm is small.

In particular, we study operator Lipschitz functions, i.e., functions f such that

$$\|f(N_1) - f(N_2)\| \le \text{const}\|N_1 - N_2\|$$

and operator Hölder functions of order α, $0 < \alpha < 1$. We also study the case when $N_1 - N_2$ belongs to Schatten–von Neumann ideals.