

Colloquium

Vladislav Goldberg

NJIT

**Linearizability Criterion
for d-Webs in the
Plane with Applications**

Abstract: We find $d - 2$ relative differential invariants for a d -web, $d > 3$, on a two-dimensional manifold and prove that their vanishing is necessary and sufficient for a d -web to be linearizable. If one writes the above invariants in terms of web functions $f(x, y)$ and $g_4(x, y), \dots, g_d(x, y)$, then necessary and sufficient conditions of linearizability of a d -web are two PDEs of the fourth order with respect to f and g_4 , and $d - 4$ PDEs of the second order with respect to f and g_4, \dots, g_d . For $d = 4$, this result confirms Blaschke's conjecture on the nature of conditions of linearizability of a 4-web. We also give Mathematica codes for testing 4- and d -webs, $d > 4$, for linearizability and examples of their usage.

**Thursday, October 16
Please Note Special Day
4:00 pm
204 Smith Hall**