On rigorous verification of the crossed mapping condition
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In this talk, we study the first bifurcation problem of the Henon map. Our main tool, the crossed mapping condition, is a condition for a holomorphic map defined on a bidisk which requires the map expands and contracts two directions of the bidisk in the topological sense. Combined with the holomorphic nature of the map, the crossed mapping condition enable us to control the exact number of the intersection between some specific pieces of unstable and stable manifolds. Thus, by verifying the condition using rigorous numerics, we can identify where and when the first bifurcation occurs.

This is a joint work with Yutaka Ishii.