Chapter 5: Some definitions

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$f(A)$ lies across B vertically

Definition

If A and B are rectangles, we say that "$f(A)$ lies across B vertically" if the images of the right and left sides of A lie inside the right and left sides of B (in terms of x-coordinates), and the images of the top and bittom sides lie outside B, one on or above the top of B and one on or below the bottom of B.

Markov partitions

Definition

Assume that $S_1, \ldots, S_r$ are rectangular subsets of a rectangle S whose interiors do not overlap. For simplicity we will assume that the rectangles are formed from segments parallel to the coordinate axes and that the map f stretches the rectangles in the direction of one axis and contracts in the direction of the other. Assume that whenever $f(S_i)$ intersects S_j in a set of nonzero area, $f(S_i)$ "lies across S_j" so that stretching directions are mapped to stretching directions, and shrinking directions are mapped to shrinking directions. Then we say that $\{S_1, \ldots, S_r\}$ is a Markov partition of S for f.