Visualization of multivariate functions, sets, and data

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Level set trees (contour trees)

A level set tree is a basic concept underlying many visualization tools.

(1) A level set tree is a recursive approximation of a function, (2) a shape tree is a recursive approximation of a set, (3) a tail tree is a tree of data points.
Visualization of a function
Visualization of a set

coordinate 1

coordinate 2
Visualization of data
Summary

- Level set trees and contour trees have been previously used
  - as a user interface for the visualization of 3D level sets,
  - as a data structure for fast extraction of isosurfaces.

- New tools (implemented in package “denpro”):
  - shape isomorphic transforms are defined,
  - spatial trees are used in visualization,
  - sets and data are visualized, in addition to functions.
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