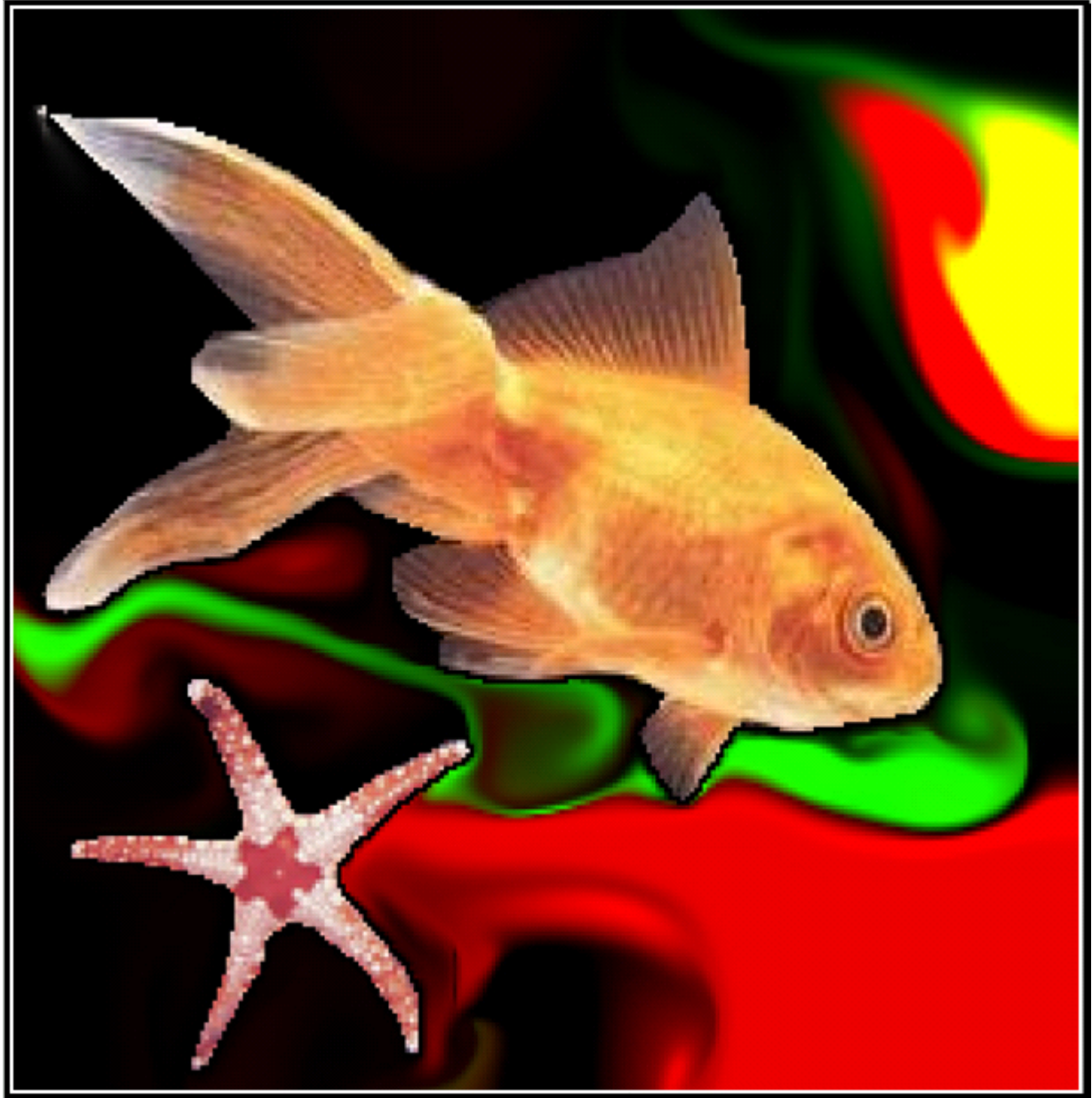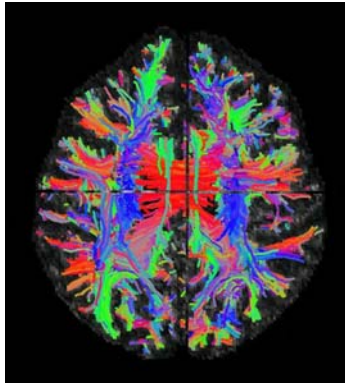# SIBGRAPI 2005 IMAGES

Front cover

This image, by Alex Bordignon (PUC-Rio, Brazil) show the trajectory of ink advected along the velocity field on a 256 x 256 domain; the fish and the star represent the boundary conditions to the fluid.

Back cover

This image, by Paulo Dellani (UFSC, Brazil) is a 3D projection of human brain white matter trajectories reconstructed with a 4th order Runge-Kutta order-based integration algorithm applied to the main eigen vectors of a diffusion tensor field, that were measured using a magnetic resonance diffusion tensor imaging sequence. The color of every trajectory encodes the spacial orientation of the main eigen vector of the diffusion tensor at the coordinated used as seeding point for the fiber tracking algorithm. In the picture, red represents left-right orientation, green, anterior-posterior and blue, cranio-caudal. All the seeding points layed in the same transversal slice, displayed as background here in this image.
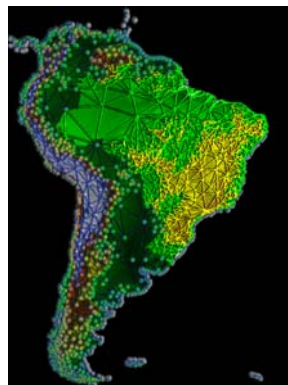
This image, by Thomas Lewiner (PUC-Rio, Brazil), Debora Lima (UERJ, Brazil) Hélio Lopes (PUC-Rio, Brazil), Marcos Craizer (PUC-Rio, Brazil), Luiz Velho (IMPA, Brazil) and Cynthia O. L. Ferreira (PUC-Rio, Brazil) has been obtained by the sum of five SIBGRAPI papers and submissions. The original mesh has been generated from a noisy map of South America cleaned with the curvature motion presented in "Curvature Motion for Union of Balls" (Sibgrapi 2005, inside). The height has been mapped on the image, and the terrain mesh has been created with "Hierarchical Isocontours Extraction and Compression" (Sibgrapi 2004) on the 2D version of "CHF: A Scalable Topological Data Structure for Tetrahedral Meshes". The mesh has then been simplified using "Fast Stellar Mesh Simplification" (Sibgrapi 2003), and transmitted with "GEncode: Geometry--driven compression in arbitrary dimension and co-dimension". The final edition has been performed using the GIMP.
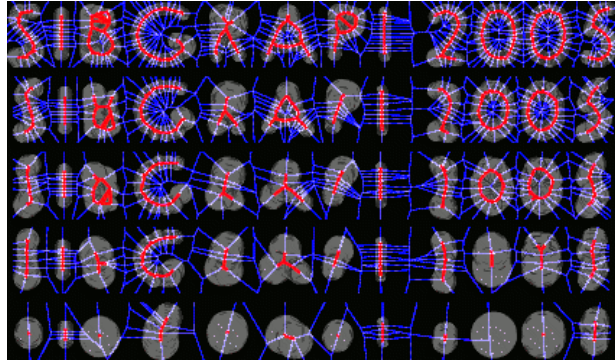
This image by Thomas Lewiner, Cynthia O. L. Ferreira, Marcos Craizer (PUC-Rio, Brazil), and Ralph Teixeira (FGV, Brazil) corresponds to the curvature motion described in "Curvature Motion for Union of Balls" (inside) applied on the Sibgrapi logo. The blue lines correspond to the Voronoi diagram of the intersection points of the spheres, and the red ones correspond to the medial axis of the shape. The union of balls has been generated from a thinning and a distance transform from the Sibgrapi logo using the Megawave.