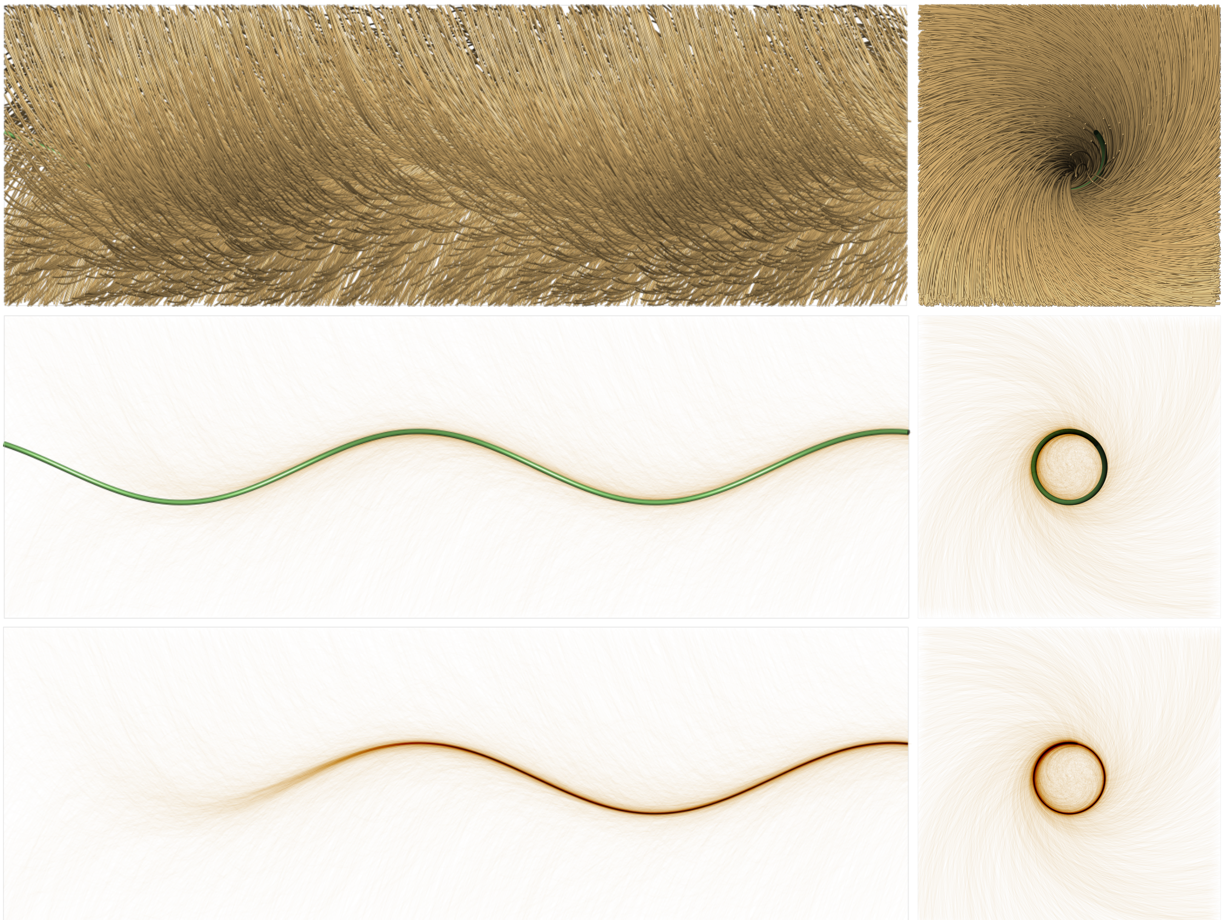
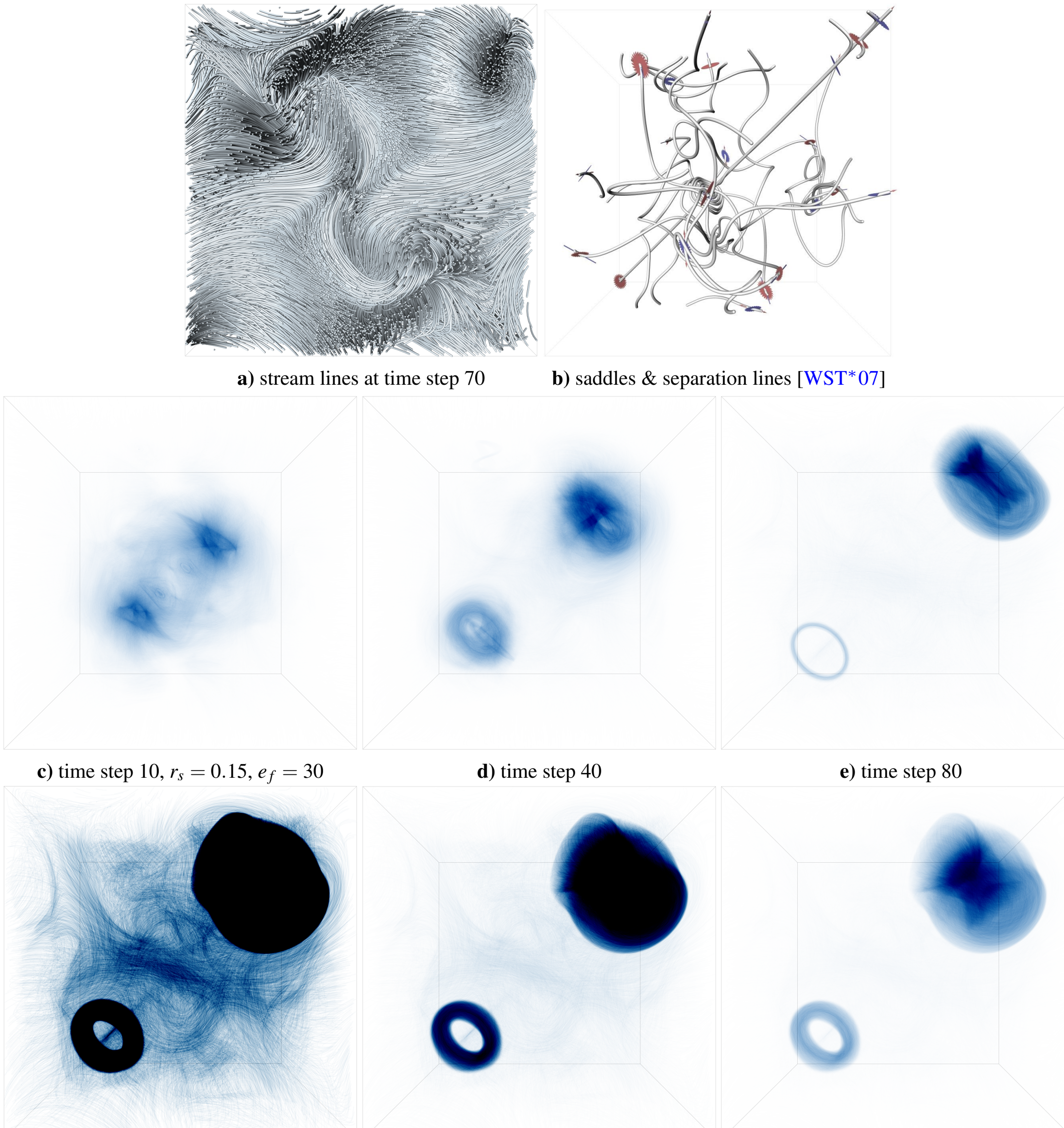


a) side view of trajectories ($r_s = 0.01$,$e_f = 15$) **b**) top view

Figure 6: ***Beads example:*** *Density projection of 2D time-dependent aggregating cell model presented by Wiebel et al. [WCW*11]. The top row shows* 5000 *original trajectories, second row the ground truth core line structure (green), last row the density projection for* $r_s = 0.01$ *and* $e_f = 15$.



a) stream lines at time step 70 **b)** saddles & separation lines [WST*07]

c) time step 10, $r_s = 0.15$, $e_f = 30$ **d)** time step 40 **e)** time step 80

f) time step 70, $r_s = 0.15$, $e_f = 5$ **g)** $r_s = 0.15$, $e_f = 15$ **h)** $r_s = 0.15$, $e_f = 30$

Figure 7: ***Borromean example:*** *Density visualization of a time-dependent magnetic field describing the creation of two separate knot structures over time. The image shows the result for subtractive blending of* 15.000 *randomly seeded trajectories, integrated in forward and backward direction. Figure a) shows all field lines, b) extracted critical points and separation lines [WST*07] (note that the field contains only saddle type features), c) to d) show different time steps of the data set, f) to h) a variation of the falloff parameter e_f.*

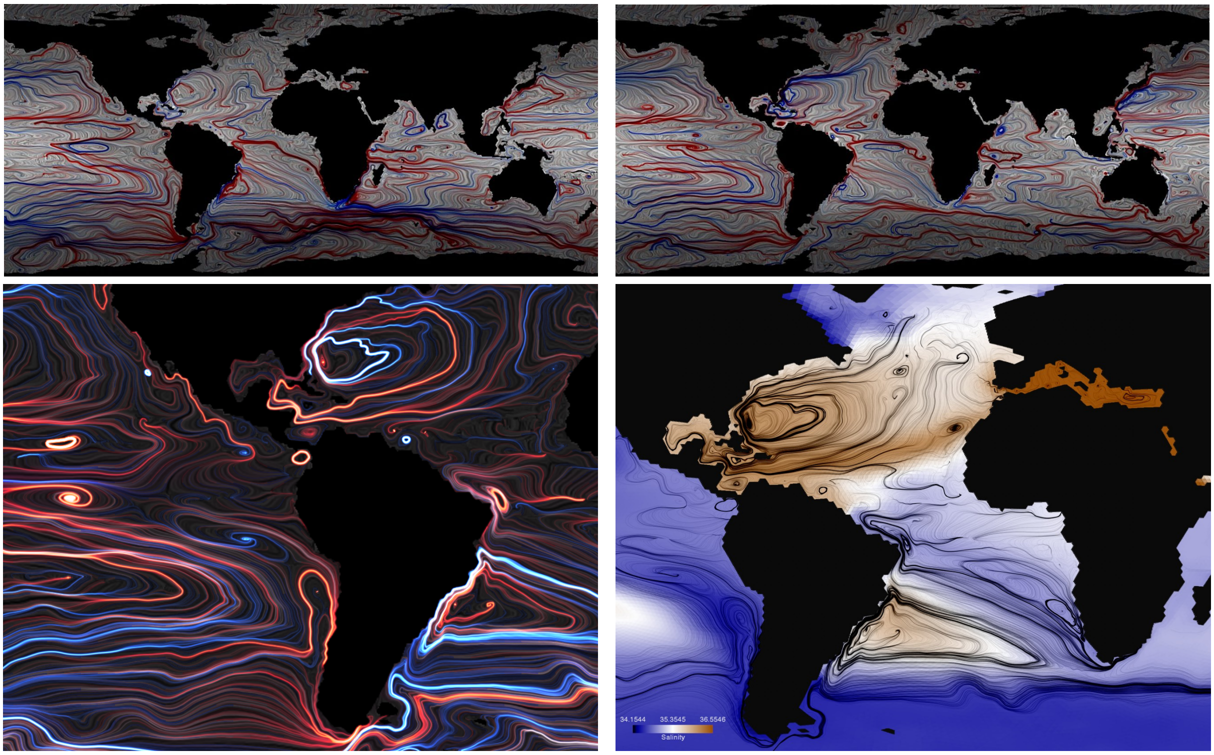


Figure 8: ***Ocean example:*** 180×90 *stream lines uniformly seeded within the ocean simulation data set at a depth of 100m (separated into* ***forward*** *and* ***backward*** *lines). The top row shows two time step 1 and 17 of 36 total time steps (3 steps per month) together with a LIC visualization, grey levels indicate temperature. The bottom row shows two close ups using additive blending (left) and subtractive blending together with the salinity field (see Figure 5,* $r_s = 1.0$, $e_f = 5$*).*

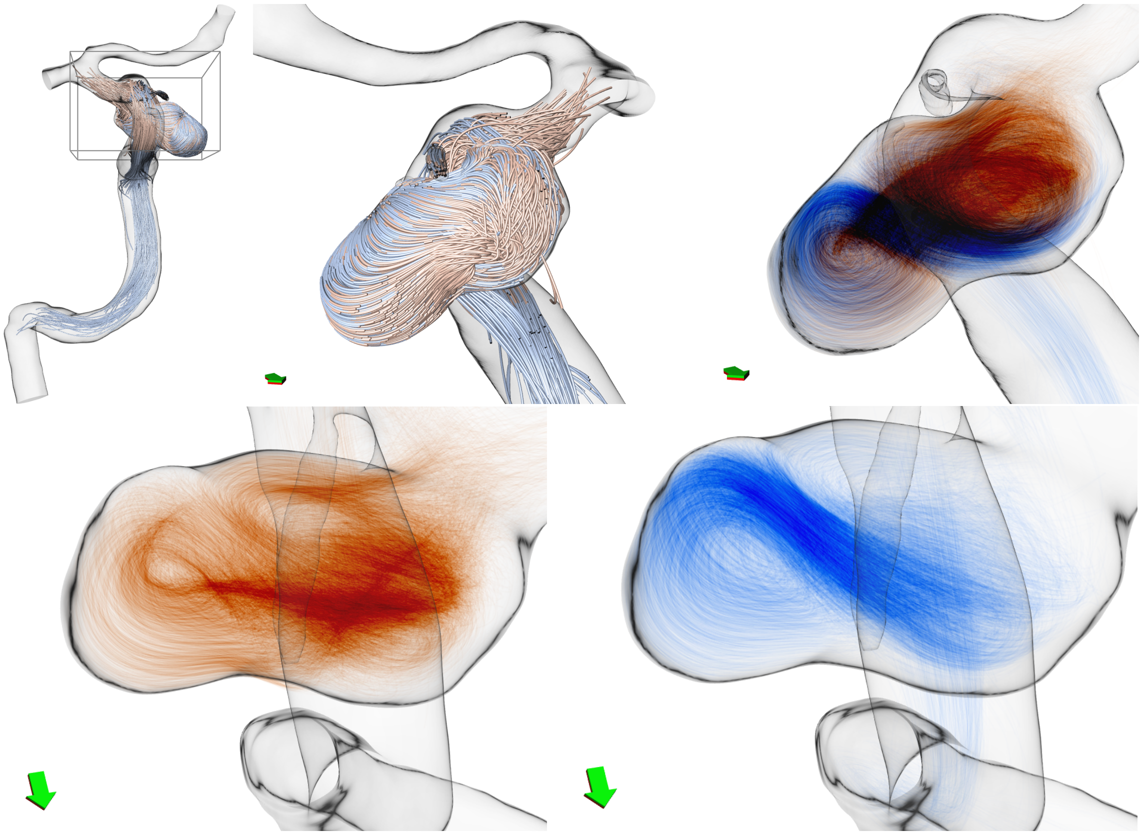


Figure 9: ***Aneurysm example:*** 30.000 *stream lines randomly seeded within an simulated aneurysm blood flow. The top row shows the overall geometry, a zoomed view to the aneurysm region, and the density projection of the displayed curves (separated into* ***forward*** *and* **backward** *lines), for $r_s = 0.004, e_f = 30$. The bottom row shows separated forward and backward structures. The density projection shows compressed inflow area (blue) and attracting regions in the interior (red), while a more detailed interpretation requires additional feature descriptors (e.g., vortex criteria).*