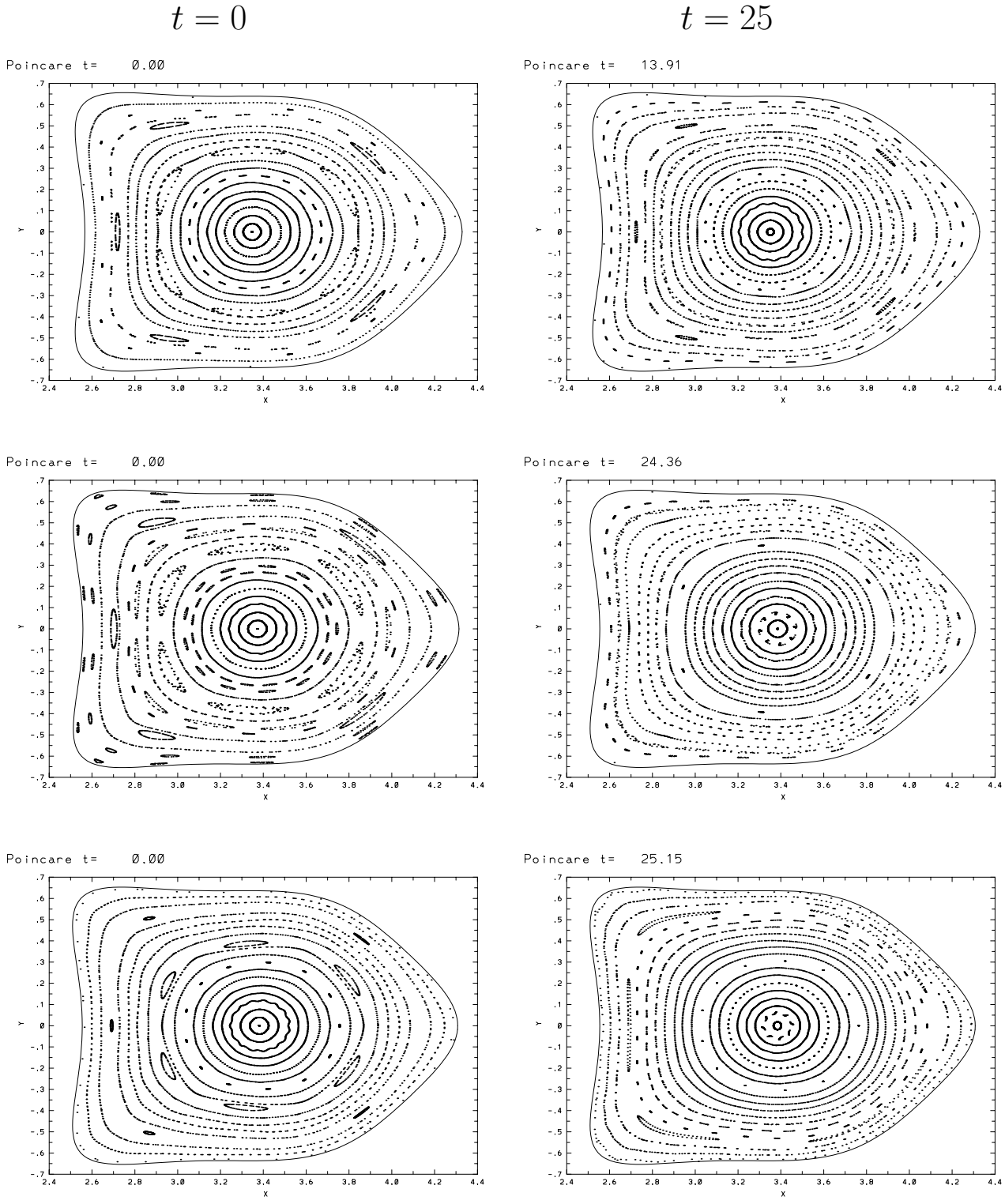


Figure 1: Resistive relaxation initially reduces the magnetic islands present in the VMEC ideal MHD equilibrium. Shown: magnetic field puncture plots at half-period in ϕ for initial VMEC ($t = 0$) and relaxed ($t \simeq 25$, or $t \simeq 14$ for lowest β) configurations, for β (increasing down) of 4.25, 7, and 8%. Magnetic axis towards the left side.

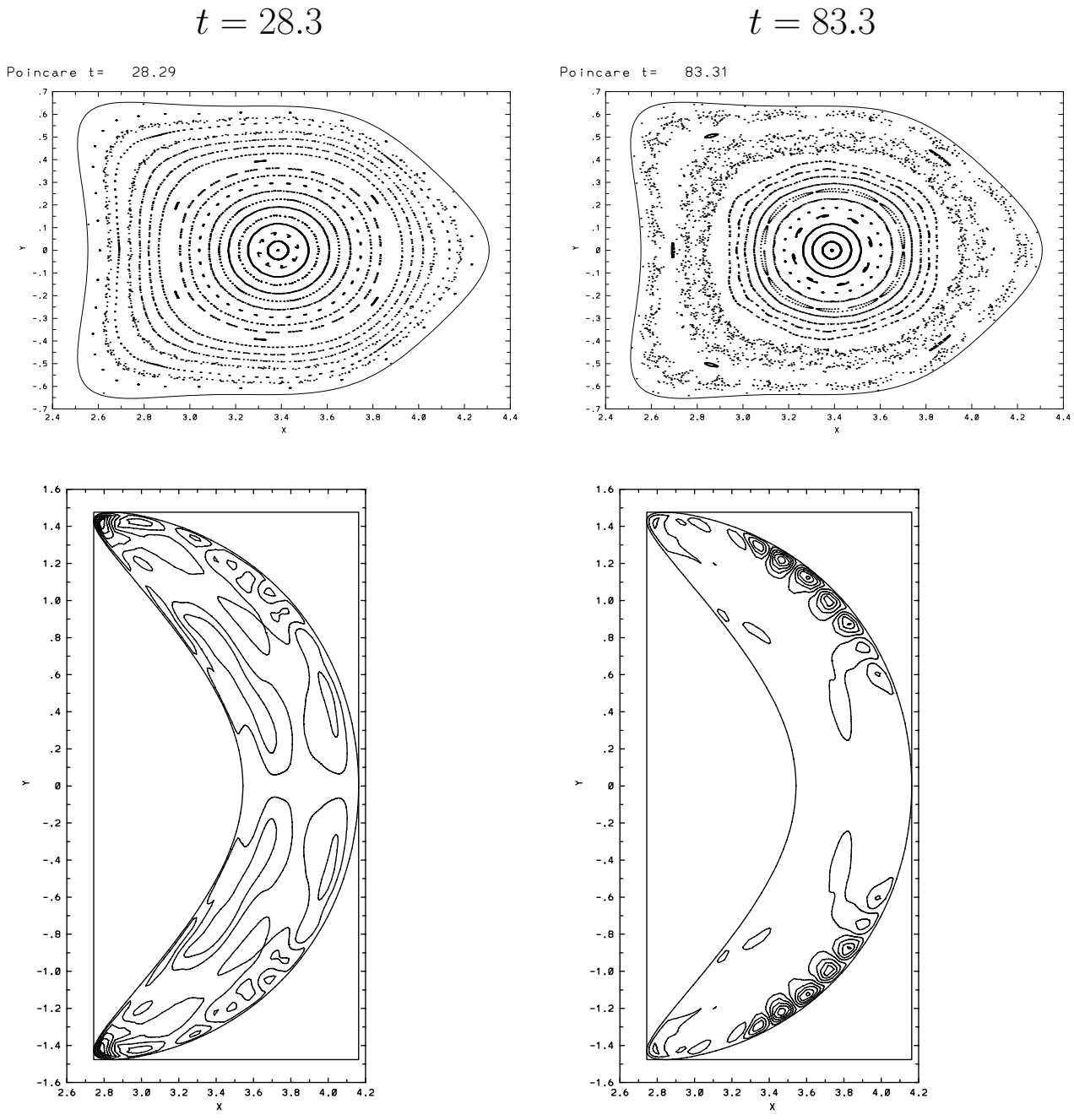
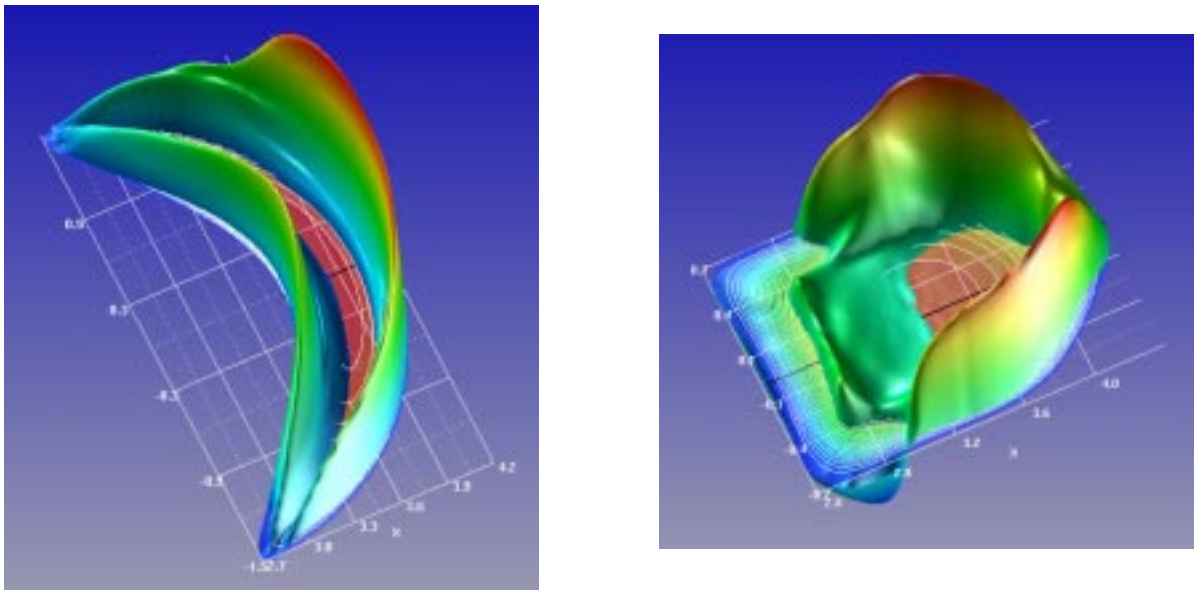


Figure 2: MHD resistive ballooning grows rapidly and causes loss of outer flux surfaces, by $t = 80\tau_A$ at $\beta = 7\%$ and $S = 10^5$. Shown are magnetic field puncture plots (top, cross-section taken at half-period in ϕ) and velocity stream function u (bottom, at $\phi = 0$). Resistive ballooning is beginning at $t = 28.3\tau_A$ and well developed by $t = 83.3$.

v_{*e} $\phi = 0$ ϕ at half-period



RJ_ϕ

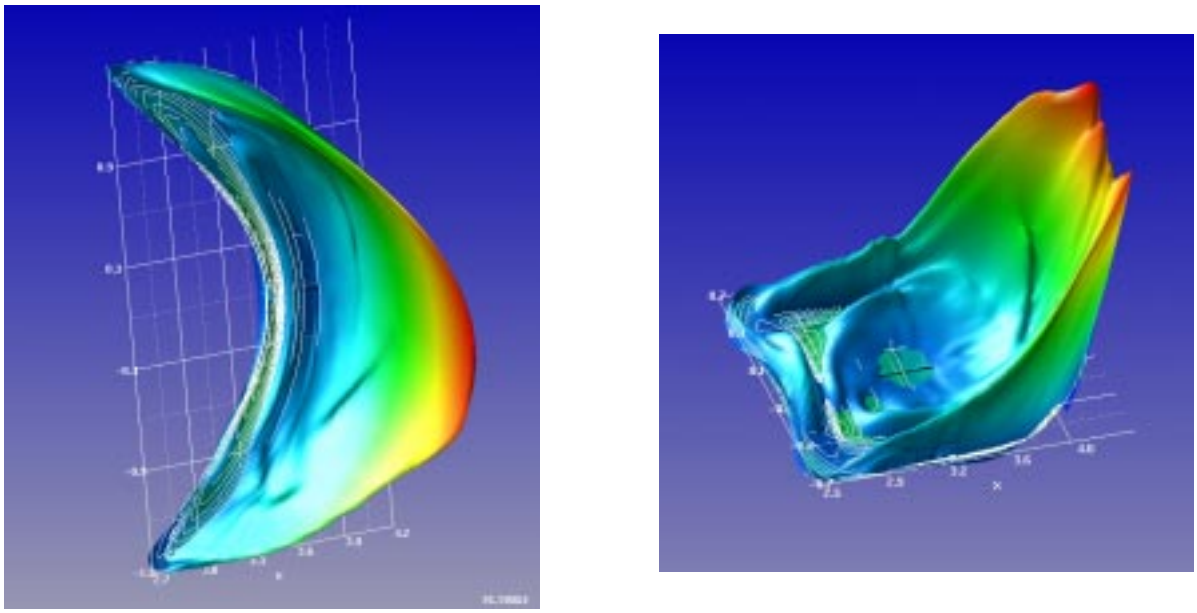


Figure 4: Electron diamagnetic flow v_{*e} ($\simeq -v_{*i}$) (top) and toroidal current density profiles RJ_ϕ (bottom) at $\beta = 7\%$, equilibrium $p_i = p_e$, at two toroidal angles. The grid represents a vertical plasma cross-section, tilted to bring out the contours. Equilibrium contours of p_e are shown as white curves on the base plane of the $v_{*e\theta}$ plots, showing the concentration of the flow in the region of strong near-edge pressure gradient.