



Figure 1: Spacetime region on which we solve the wave equation on the interior of the expanding region. We solve a sequence of finite problems, i.e., we consider a solution  $\psi_R$  with prescribed data on  $\Sigma_R$ , and then show that the limit  $\lim_{R \rightarrow \infty} \psi_R$  exists in a suitable energy space. In this step, we solve up to a  $\Sigma_{r_0}$  hypersurface, where  $r_0 > r_C$ .