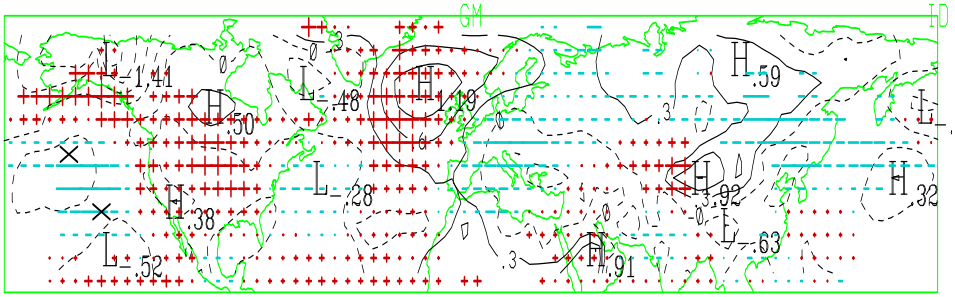
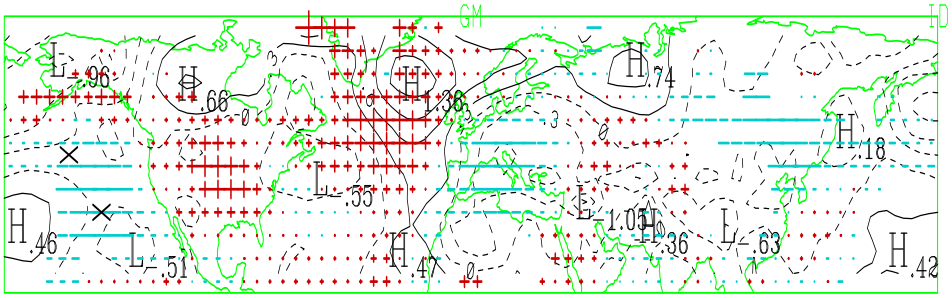
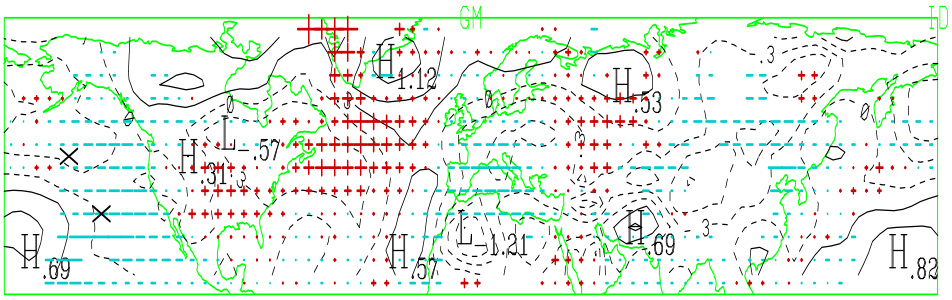
$\theta = 0^o \quad t = 0$



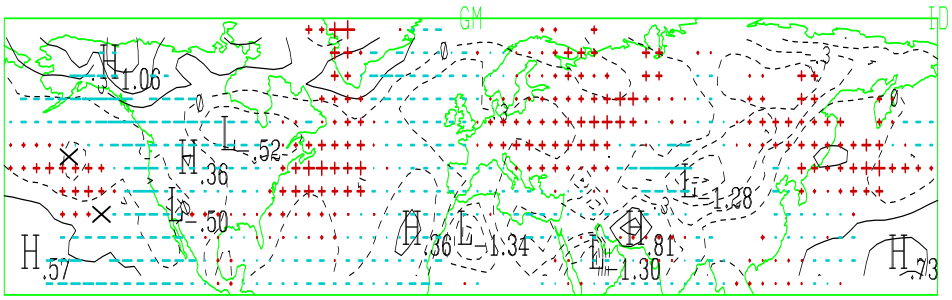

$\theta = 45^o \quad t \sim 2.1$

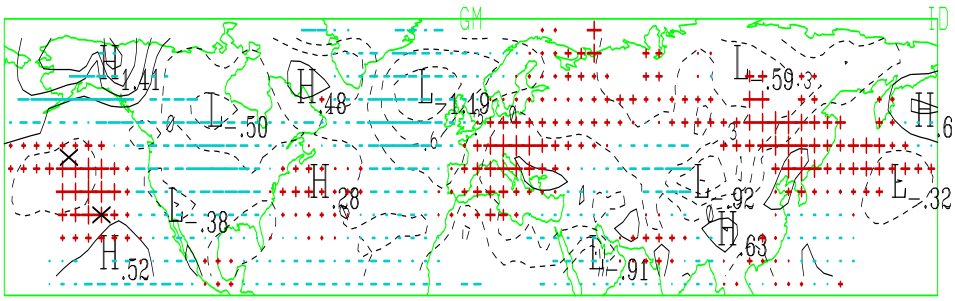



$\theta = 90^o \quad t \sim 4.3$




$\theta = 135^o \quad t \sim 6.4$




$\theta = 180^o \quad t \sim 8.5$