## **Movie Captions**

- Movie 1 Convection pattern for regime F as shown in figure 10a. The parameters in  $\Phi^f$  and  $\Phi^m$  are shown in the upper and lower panels, respectively. The bold red and blue curves are isotherms  $\Theta^j = i/10$ ,  $i = 1 \dots 9$ . The thin grey curves are the streamlines and the arrows indicate the direction of fluid flow  $(u^j)$ . The distributions of  $q^{fm}$  and  $\Theta^f \Theta^m$  are shown in the upper and lower panels, respectively.
- Movie 2 Convection pattern for regime  $M_z$  as shown in figure 10b. The parameters in  $\Phi^f$  and  $\Phi^m$  are shown in the upper and lower panels, respectively. The bold red and blue curves are isotherms  $\Theta^j = i/10$ ,  $i = 1 \dots 9$ . The thin grey curves are the streamlines and the arrows indicate the direction of fluid flow  $(\boldsymbol{u}^j)$ . The distributions of  $q^{fm}$  and  $\Theta^f \Theta^m$  are shown in the upper and lower panels, respectively.
- Movie 3 Convection pattern for regime  $C_f$  as shown in figure 10c. The parameters in  $\Phi^f$  and  $\Phi^m$  are shown in the upper and lower panels, respectively. The bold red and blue curves are isotherms  $\Theta^j = i/10$ , i = 1...9. The thin grey curves are the streamlines and the arrows indicate the direction of fluid flow  $(u^j)$ . The distributions of  $q^{fm}$  and  $\Theta^f \Theta^m$  are shown in the upper and lower panels, respectively.
- Movie 4 Convection pattern for regime P as shown in figure 10d. The parameters in  $\Phi^f$  and  $\Phi^m$  are shown in the upper and lower panels, respectively. The bold red and blue curves are isotherms  $\Theta^j = i/10$ ,  $i = 1 \dots 9$ . The thin grey curves are the streamlines and the arrows indicate the direction of fluid flow  $(u^j)$ . The distributions of  $q^{fm}$  and  $\Theta^f \Theta^m$  are shown in the upper and lower panels, respectively.