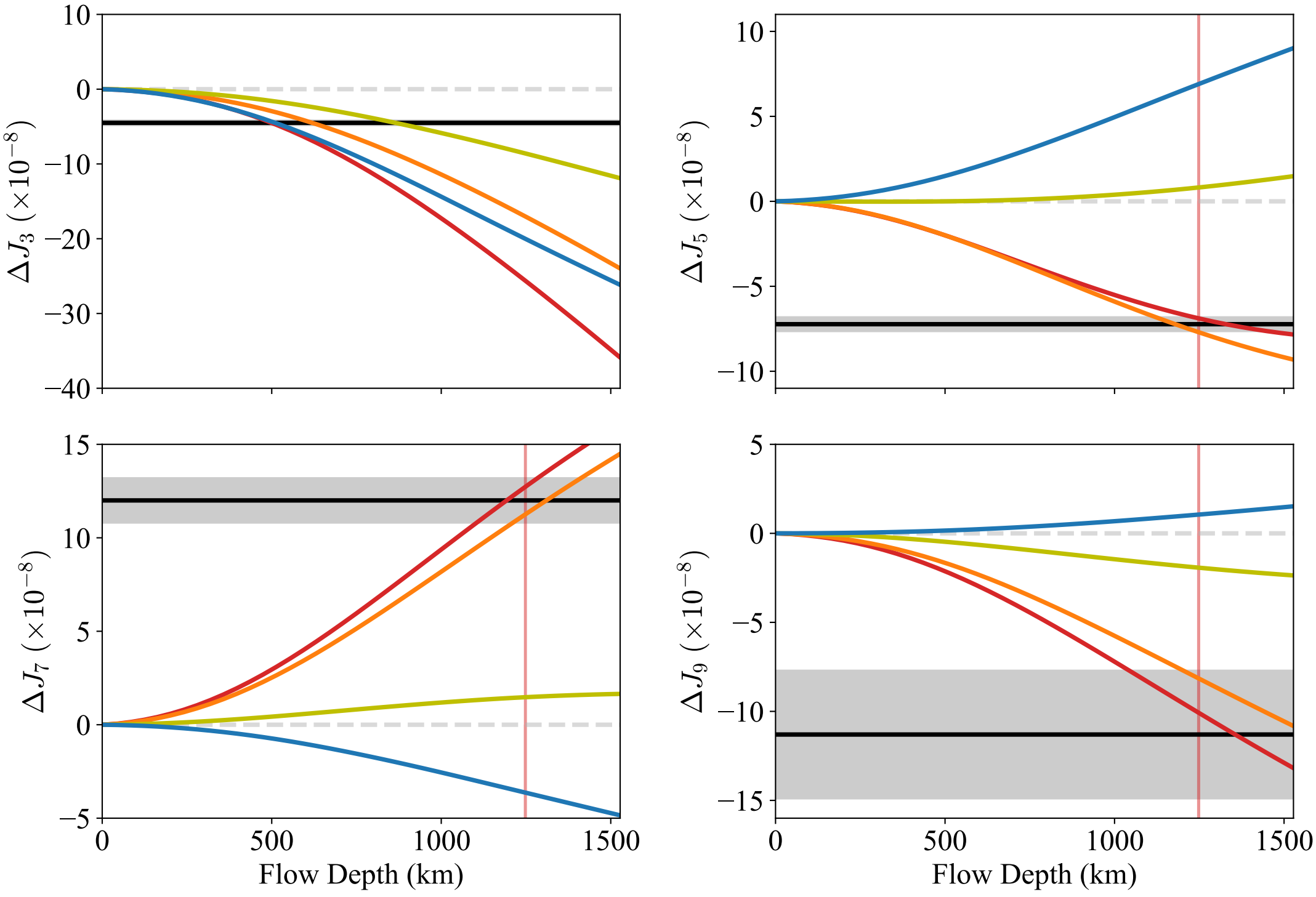Gravitational Signals of the Off-Equatorial and Mid/High Latitiude Jets