The zonal-mean winds in the tropical stratosphere can be accurately forecast for at least several months as they advance through the Quasi-biennial Oscillation (QBO), a quasi-periodic oscillation of the equatorial zonal wind between easterlies and westerlies. The QBO affects the winter Northern Hemisphere tropospheric circulation even at the surface. The figure shows composites of the December–February mean, air temperature during years with westerly QBO phases minus those with easterly phases at the surface (left) and at 850 hPa (right). The contrast between QBO phases is particularly notable over northern Asia where it can exceed 1.25°C at the surface. Examination of several state-of-the-art numerical ensemble seasonal forecasts showed they did not adequately account for this QBO-troposphere connection. Thus, there is potential predictability at seasonal timescales that could be exploited by either statistical adjustment of current model forecasts or improvements to the representation of stratospheric dynamics in numerical forecast models.