



## **Seasonal to Decadal Predictability of the Quasi-Biennial Oscillation and its Northern Winter Teleconnection**

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Hindcasts made with coupled ocean-atmosphere climate models are used to examine the predictability of the Quasi-Biennial Oscillation (QBO) on seasonal and decadal timescales. All models used have an internally generated QBO. Predictability of the QBO was found for more than three years into the future; well beyond timescales normally associated with internal atmospheric processes. In particular, correlation scores with observational analyses exceed 0.7 at a lead time of 12 months and can be 0.5 at a lead time of 36 months in some models. The variation of predictability with season shows that skill is lowest in winter. An assessment of perfect predictability suggests that higher skill may be achievable through improved initialisation and climate modelling of the QBO, although this may depend on the realism of gravity wave source parametrizations in the models. Finally, we show that skilful prediction of the QBO itself does not guarantee predictability of the extratropical winter teleconnection that is important for surface winter climate prediction.