appropriate PREM Q values. Fig. 19 illustrates that the series of three standard linear solids can approximate a constant Q efficiently to within a few per cent. Associated with the absorption-band model is physical dispersion which affects the arrival times of the waves. To accommodate this, we take PREM, which has a reference frequency of 1 Hz, i.e. $\omega_0 = 2\pi$, and determine the shear modulus appropriate for a frequency ω_c at the logarithmic centre of the frequency range of interest (Liu *et al.* 1976):

$$\mu(\omega_c) = \mu(\omega_0)\,[1 + 2/(\pi Q_\mu)\ln(\omega_c/\omega_0)]. \tag{49}$$

Given $\mu(\omega_c)$ we can calculate the relaxed modulus μ_R, from which we obtain the time dependent modulus $\mu(t)$ and the unrelaxed modulus μ_U based upon eqs (8) and (10), respectively. Fig. 19 also illustrates that, over the frequency band of interest, the dispersion associated with the PREM Q model is very well mimicked by three standard linear solids.

In Fig. 20 we compare normal-mode and SEM synthetics at station ST04 of the BANJO array in Bolivia at a distance of 5° south of the epicentre (more details about the BANJO array can be found in

this is the only time in this stud
agreement is quite satisfactory, l
are based upon PREM and ther
3-D heterogeneity.

To illustrate that our impleme
we show in Fig. 24 a close-up of
nent. The *PKP* waveforms are v
of Poisson's ratio, 0.44, in the inn
not correctly represented, the *PK*
Numerically this poses a chall
fine enough the very slow inner
3.6 km s^{-1} is not sampled by en
results, the *PKP*(AB) and *PKP*
as the *PKP*(DF) inner core bra
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synthetics. The *PKP*(DF) arriva
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implementation of the method,