4. BOUNCING MODELS AND OBSERVATION

As we have seen in the previous sections, nonsingular models solve the problems of standard cosmology. The example discussed in § 3 shows that some particular models produce predictions that are not incompatible with observations. Some other predictions generic to bouncing models are:

- The spectrum of primordial perturbations displays a small oscillatory component, see Figure 4 (Falciano et al. 2008).
- Copious production of particles near the bounce. This has been estimated in the case of gravitons in the Pre-Big Bag model (Gasperini & Veneziano 2003), and for photons in the WIST theory (Salim et al. 2005, 2007).

5. CONCLUSION

Nonsingular models solve the problems of standard cosmology, and furnish predictions that may be contrasted with observation in the near future. There are still problems to be solved (such as the influence on the perturbations of the matter creation at the bounce, the amount of matter created, and the possible growth of initial perturbations), but the bottom line is that models with a bounce are certainly worth studying, on their own sake and/or as a complement to inflation[10].

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[10] See for instance Cai et al. (2009).