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Supplementary Materials for: "On the tails of Pitman–Yor random probability measures: Transport maps and stick-breaking constructions"

María F. Gil-Leyva[1] · **Vianey Palacios Ramirez**[2] · **Miguel de Carvalho**[3,4]

1 Further numerical illustrations

Figure 1.1 illustrates that the trajectories of the tails the Dirichlet process at their extreme levels do not concentrate around the centering distribution, and are always exponentially lighter than those of the centering distribution; this applies both *a priori* as well as *a posteriori*. The prior and posterior trajectories from the log survival functions follow closely the rate of decay of $\log \exp \bar{G}_0^{-1}$ which is the leading term of the upper and lower bound in given by Doss and Sellke (1982).

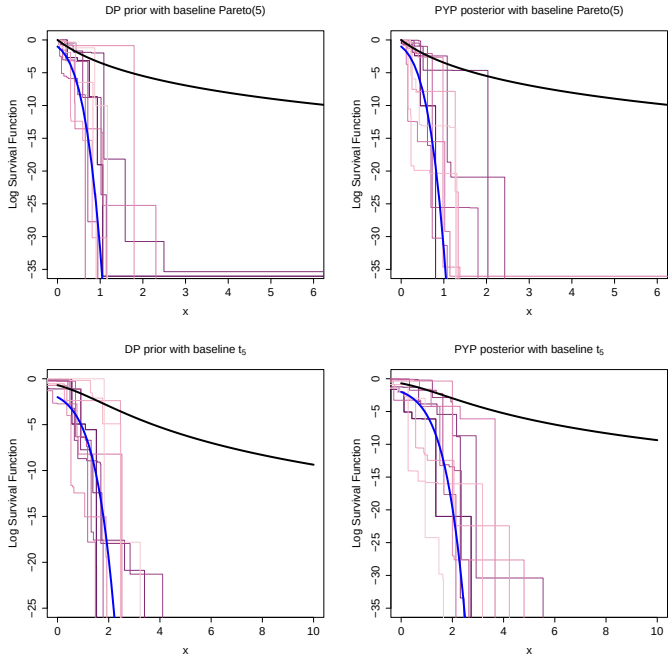

Fig. 1.1 Centering log survival function ($\log \bar{G}_0$; black) vs $\log \exp(-\bar{G}_0^{-1})$ (blue) which follows from main results in Section 3; these are plotted alongside random trajectories of log survival functions from PYP($\sigma = 0, \theta = 1, P_0$). Top: G_0 is a Pareto distribution with tail index 5. Bottom: G_0 is a t-distribution with 5 degrees of freedom.

✉ Miguel de Carvalho
Miguel.deCarvalho@ed.ac.uk

[1]Department of Probability and Statistics, Universidad Nacional Autónoma de México, México
[2]School of Mathematics, Statistics and Physics; Newcastle University, UK
[3]School of Mathematics, University of Edinburgh, The King's Buildings, Edinburgh, EH9 3FD, UK
[4]Department of Mathematics, University of Aveiro, Portugal

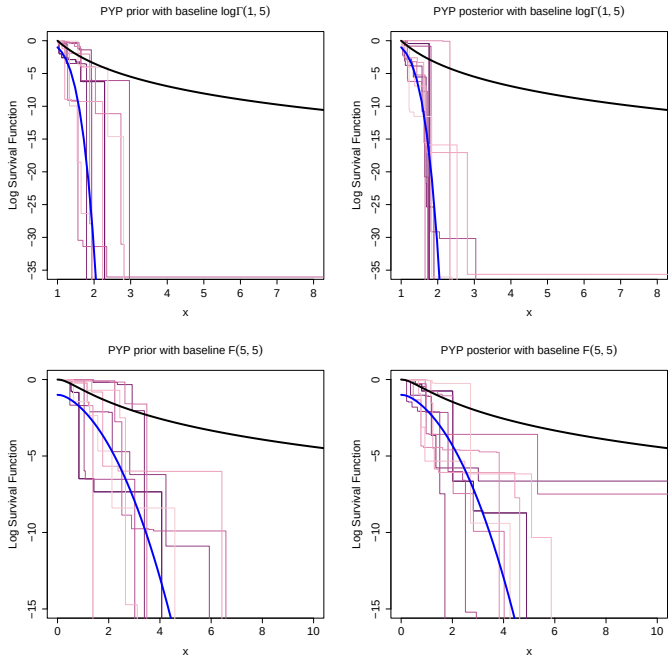

Fig. 1.2 Centering log survival function ($\log \bar{G}_0$; black) vs $\log \exp(-\bar{G}_0^{-1})$ (blue) which follows from main results in Section 3; these are plotted alongside random trajectories of log survival functions from PYP($\sigma = 0, \theta = 1, P_0$). Top: G_0 is a log-gamma distribution with shapelog 1 and ratelog 5. Bottom: G_0 is an F-distribution with degrees of freedom $(5, 5)$.

References

Doss H, Sellke T (1982) The tails of probabilities chosen from a Dirichlet prior. The Annals of Statistics 10(4):1302–1305