Authors' reply ☆

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We would like to thank Dr. Laura and others for their comments on our paper. We feel that the comments will be of great help to us and to the readers of the journal who may have an interest in the field of rotordynamics, in particular asymmetric shafts. The comments provide important information on the dynamic stiffening effect and many useful contributions on this aspect have been cited in the references.

The authors agree that the dynamic stiffening aspect is another point one should consider when dealing with slotted shafts, beams with holes, etc. Although relatively many references are cited in our paper, they are mainly associated with the asymmetric shafts with possible instabilities and also with composite shafts. However, the intentions of our paper is mainly to consider the possible instabilities due to asymmetry in the case of isotropic and composite slotted shafts. And also to deal with the compensatory/inertia slots to reduce such effects of instability. But the comments on the dynamic stiffening effects are interesting and useful. As discussed in the comments, these effects are clear from Figs. 8–10 of our paper in the case of isotropic shafts. And interestingly not in composite shafts. The comments do suggest that it is important for the designer to be aware of the dynamic stiffening effect in slotted shafts, in addition to the possible instability that arises between the eigenfrequencies associated with the different lateral stiffnesses of the rotor in two perpendicular directions.