We thank the reviewer for the thorough and constructive comments. Below, we address each point in detail and indicate the changes made in the revised manuscript.

This article builds upon previous studies on pitch bearing design guide (ISO 76, DG03) and extended the life calculation from a classic deterministic approach to probabilistic one. The latter approach takes into account the uncertainties in wind turbulence, bearing geometry, material hardness level, et al, which can qualitatively rank the most sensitive parameters for its probability of failure

Specific comments are as follows:

1. *The life calculation did not root from rolling contact fatigue assumption, instead, it derives from contact stress safety factor. How realistic is to assume structural reliability as the driving failure mode for pitch bearings? Is there evidence from field observations to support this assumption?*

   Answer: The paper focuses on the static-overload safety factor that limits irreversible local plastic deformation in the raceway and ring. The static rating is derived directly from the maximum Hertzian contact stress. This follows ISO 76 and DG03, which require the designer to demonstrate an adequate margin against permanent deformation before any RCF life is assessed.
   DG03 explicitly states that *"the damage mode with the most critical consequences is ring cracking of pitch bearings ..."* and lists other observed modes—cage wear, raceway-edge damage, raceway wear, and bolt-connection failures. Ring cracking is low-frequency but high-consequence (potential blade release). Standards, therefore, make the static check mandatory:
   - IEC 61400-1 and DNV-ST-0361 require verification of bearing static capacity in the ultimate-load cases.
   - IEC 61400-8 lists a *reliability-based* approach as one of three accepted structural-assessment routes for RNA structure.

2. *Included in the introduction, the failure modes are mentioned as "rolling contact fatigue, core crushing, edging loading, ring fracture, fretting, false brinelling". Is there any connection of the present study with the top failure modes?*

   Answer: The present work quantifies the static-overload limit state—local plastic deformation that can progress to ring cracking or core crushing. This choice is not isolated from the other field-observed modes, and also, as stated in the paper and in (Harris and Kotzalas, 2006), this permanent deformation can cause stress concentrations of considerable magnitude and the formation of cavities in the raceways. These indentations, together with conditions of marginal lubrication, can also lead to surface-initiated fatigue damage. In addition, edge-loading fracture is a *localized* expression of the same contact-stress field we compute; when our model predicts high peak Hertzian stress at the raceway edge, that stress map directly indicates heightened edge-loading risk. Thus, by characterizing the static overload response, the study provides the mechanical input that governs—and often initiates—several of the other dominant failure modes. In order to cover the above clarification, the title, abstract, and introduction have been revised.

3. *Degradation criteria G should get close to the failure modes as much as possible. The proposed one based on safety factor only appears an oversimplification. As shown in the results, probability of failure is less than 0.1% for most of the cases. This estimate is much lower than what has been reported in public domain.*

   Answer: Our study limits the degradation index G to a single trigger: the contact-stress safety factor falling below unity. We did this deliberately because the paper addresses one specific ultimate limit state of static overload. This criterion is one of the assessments in the blade bearing analysis; therefore, the probabilities of failure are not significant. IEC 61400-8 recommended annual probability of failure target is $5x10^{-4}$ for wind turbine structural components in ultimate, fatigue, stability, and critical deflection analysis. The introduction is modified to cover the above clarification. In addition, following texts are in the results section:
   " (IEC 61400-1, 2019; IEC 61400-8, 2024) set a target value for the nominal failure probability for structural design for extreme and fatigue failure modes for a reference period of one year is 5×10−4 for component class 2. Component class 2 is "safe-life" structural components whose failure may lead to the failure of a major part of a wind turbine, as given in (IEC 61400-8, 2024). All the wind configurations have a lower failure probability than the target value."
   "In addition, these two sites have higher failure probabilities than the failure target value for component class 2 aa given in (IEC 61400-8, 2024)."

4. *The studied bearing is 3.6m size. Is there any plan to address the structural flexibility as the uncertainty in the study?*

   Answer: In this study, the effect of structural flexibility, especially from the ring, is not considered. The effect of the flexibility of the ring was previously studied in the works by Menck et al. (2020) and Rezaei et al. (2024). As described in 3.2.4, uncertainty in the maximum ball force, the effect of flexibility is considered by a distribution from recalculation of the work by (Rezaei et. al 2024).

5. *Please correct typos in the paper*.

   Answer: The manuscript has been reviewed, and typographical and grammatical errors have been corrected.