We would like to thank Dr. Matthias Stammler for his constructive comments, which have improved the quality of our paper. We have addressed all the comments, as presented below.

A very interesting work and a good approach to compare IEC classes with real sites!

This comment collects a few things I found during a first read, with a focus on practical aspects of blade bearings:

Line 13: "Blade bearings serve as the connection point between the rotor and the hub, allowing the blades to rotate around the hub. " In my understanding, the rotor consists of blades, blade bearings, and the hub. Thus I would rather say the blade bearings connect the blades with the hub. An I find it misleading to say the blade rotate around the hub. They rather rotate around their own primary axis?

Answer: The comments are correct, and the sentences are changed as follows:

"*Blade bearings serve as the connection point between the blades and the hub, allowing the blades to rotate around their axis.*"

Line 16: I would recommend to mention cage failures as well.

Answer: The text has been revised as below:

"*Blade bearing failure consists of different damage modes, including rolling contact fatigue, core crushing, edge loading, ring fracture, rotational wear, fretting, false brinelling (Andreasen et al., 2022), and cage damage.*"

Line 20 to 30: There is also a publication by Schwack comparing the different RCF calculation methods.

Answer: The following text is added:

*", and Schwack et al. (2016) compared different fatigue lifetime calculation methods and showed huge differences in the calculated lifetime for different approaches."*

Line 36 to 42: The plastic deformation of 0.0001D is set a limit value in the ISO76 and the 2009 version of the DG=3. However, the 2024 version of the DG03 opens possibilities to increase this value, mainly for two reasons:

- Pitch bearings in general can operate in raceway conditions that are considered a failure in other applications. Macroscopic spallings are not a reason to stop operating a pitch bearing and will not cause an exchange of it. Only when the risk of inoperability is imminent (i.e. expected friction torque too high for drive or loss of blade connection) an exchange is undertaken.

- In four-point contact ball bearings highest static loads in rolling contacts are at high contact angles. 'Normal' operation in power production is at lower contact angles, thus for the main part of its lift, the ball does not roll over the indent.

I would highly recommend to mention these concepts in your introduction as they heavily influence the general conclusions you possibly draw at the end. Also I would vey much recommend to get acquainted with the concept of damage and failure as described in the 2024 DG03 and use those terms consistently throughout the paper.

Answer: It is correct that in some research, such as the work done by Zwirlein et al. in 1983, with total permanent deformation of 0.0005D, no core crushing occurred. To the authors' knowledge, those studies were mainly based on experience and might be correct for a certain range of bearings with specific material and heat treatment, as stated in the work by Lai et al. 2009. In DG03, 2024 also the value is open, and no specific value is presented. To compare reliability in different wind cases, the ISO 76 assumption is considered, which is a known standard and gives the ability to compare the results. In order to clarify this issue for readers, the following text is added:

*"Although some research showed that the slewing bearing can tolerate higher total permanent deformation while no core crushing occurred as stated in DG03, those results might be correct for a certain range of bearings with specific material and heat treatment, as stated in work by Lai. The current work uses the value of 0.0001D; however, there is a possibility that the core crushing damage does not occur in some bearings."*

As recommended, the paper was revised according to the concept of damage and failure. However, the term "probability of failure" is kept as a main term in reliability analysis.

Figure 1 Step2: It should be "Blade root loads" instead of "Blade's root loads" I think, because the first is a common expression. Also it is a bit confusing because the sketch shows an airfoil used in the outer portions of the blade, but most certainly not a blade root. I would consider the lift at the blade root to be negligible.

Answer: The comment is correct, and the caption was corrected.

Figure 1 Step3: Are you sure you obtain the load Q in N? Or should it be kN for this graph?

Answer: The load is $10^4$ N. It was presented to show the general distribution of the load inside the bearing. To avoid confusion, the unit has been clarified.

Figure 1 Step4: The sketch does not fit the caption. It shows to spherical bodies in unloaded contact, but certainly not a maximum Hertz stress

Answer: However, the sketch is extracted from DG03, but it does not fit the caption. The figure is changed to a proper one.

Equation 7 please give a reference

Answer: The related reference (equation 6.1 from DG03 (2024)) is added.

Line 108: Capital Z instead of small z

Answer: The text was revised accordingly.

Section 3.2.1 Pitch bearing rings are commonly manufactured of 42CrMo4 steel - please elaborate on the choice of the studies on AISI51200 (100Cr6) steel property distributions - the hardening process is fundamentally different.

Answer: The following text was added to elaborate on the consideration of 42CrMo4 steel.

*"Imdad et al. (2024) studied 42CrMo4 steel that was submitted to different heat treatments and hardness levels. The hardness level in different heat treatments has a deviation between 2% and 6.5%."*

Section 3.2.2 While it is fundamentally true that all dimensions have a certain variance to them, this is somewhat countered by the assembly process: Rings and balls are matched to obtain a target friction torque in unloaded condition. Thus combining normal distributions for all parameters does not reflect reality.

Answer: Thanks for the valuable information about the assembly process of the slew bearings. In the current study, the intention was to assess the sensitivity of each dimension; therefore, each dimension was studied independently, and combining different normal distributions didn't happen. In order to clarify it, the following text is added to the content:

*"It should be noted that each dimension was analyzed independently by the relevant distribution."*

Section 4.2.1 There is no such thing as very coarse machining of balls of this size. You usually buy them in batches of very fine tolerances and them match them to obtain target torques.

Answer: The authors acknowledge that one usually buys the balls. We could not find any reference for the tolerances; therefore, we used the machining tolerance for sensitivity analysis. In order to estimate and assess the trend of changes in the reliability due to changes in ball diameter, a broad range of values is considered; however, some values are not realistic. The following text is added to clear this consideration for the reader:

*"Although the balls are usually manufactured and sorted in a batch with fine tolerances in diameters, it is assumed that the ball diameter can change from fine to very coarse machining according to ISO 2768-1 ISO 2768-1 (1989)."*

*"However, the extreme tolerances are not realistic; they can help to observe the trend of changes in reliability. The assumption leads to a 0.15 to 1.5 mm variation in the ball diameter."*

Section 4.2.3 Lower values of raceway conformity will drastically increase the friction torque and the likelihood of surface wear. it is questionable to use a value range this big

Answer: It is correct that the lower value of raceway conformity is not so realistic; however, some previous works, such as [Daidie et al., 2008, 3D Simplified Finite Elements Analysis of Load and Contact Angle in a Slewing Ball Bearing] and [Krynke et al., 2012, Modelling the contact between the rolling elements and the raceways of bulky slewing bearings], used or presented a low value for raceway conformity. We tried to expand the raceway conformity to even somewhat unrealistic values to see how much it affects the reliability value and estimate the sensitivity of the reliability to this parameter and its trend.

Section 4.2.4 It would make sense to differentiate between the nominal contact angle (as manufactured) and the 'contact angle' (changes as a function off load and ring deformation in operation). Currently, it is a bit unclear which one the authors refer to.

Answer: The following text is added:

*"The initial contact angle in this study referred to the nominal contact angle, which is in a load-free condition."*