We wish to thank the editor for pointing out the length of our abstract and confirming that our notation was correct. We have reduced the length of the abstract to better fit with ACP's guidelines.

Below is the new version of the abstract:

"Recent observations reveal coarse (diameter > 2.5 μm) mineral dust particles are transported unexpectedly great distances from their Saharan source. Transport models represent this coarse dust transport poorly, having important feedbacks on Earth's radiative budget, carbon and hydrological cycles, and human health. We carry out sensitivity tests on the trans-Atlantic transport and deposition processes governing the long-range evolution of mineral dust size distribution in a climate model (HadGEM3-GA7.1). We test the sensitivity of coarse particle transport (up to 63.2 μm diameter) to sedimentation, convective and turbulent mixing, impaction scavenging, and dust shortwave absorption by removing or scaling the magnitude of these processes. Reductions in sedimentation velocity of 50-95% bring modelled coarse particle transport into better agreement with in-situ aircraft observations with the required reduction increasing with transport distance. Other tested processes do not result in the multiple order of magnitude changes in transported dust mass required for agreement with observations. We infer that additional process/es which are misrepresented or missing in the model must be acting to counteract particle sedimentation. Convective and turbulent mixing have minimal impact on coarse particle transport in the model but are key in controlling the vertical distribution of dust in the Saharan air layer and marine boundary layer. Impaction scavenging dominantly impacts fine dust concentration. This study adds to the growing body of evidence pointing to processes involved in coarse mineral dust transport and deposition which are not represented accurately or at all in models, which counteract the sedimentation of coarse particles in the real-world."

Editor asked: Please also check the Line 125: In "GCMs, with their grid resolution of O(100 km), ..." a number seems to be missing.

The notation O(100 km) means 'on the order of 100 km' and is therefore not missing anything.