Dear Editor,

attached please find our manuscript

*“Semi-Automated Bone Tracking in Dynamic CINE MRI during Controlled Knee Motion*”

which we would like to submit as an article to Zeitschrift für Medizinische Physik. The manuscript would fit both categories of Short Communication or an Original Article; we leave the decision of the most appropriate category to the editor.

The manuscript describes a novel semi-automated pipeline for tracking femoral and tibial motion from sagittal plane CINE MRI during active knee flexion-extension. By combining Canny edge detection and connected-component labeling with frame-to-frame transformation optimization, we demonstrate reliable tracking of bone boundaries with significant reduction in processing time compared to manual segmentation. With the current challenges in analyzing dynamic MRI data of joint motion, the manuscript outlines future potential for investigating knee osteokinematics in both normal and pathological conditions with improved efficiency and reliability.

All authors of the manuscripts meet the requirements for authorship, have read and approved the manuscripts and attest that the manuscript represents honest work. All authors declare that they have no financial or other relationship that might create a conflict of interest. All volunteers of the study gave written informed consent following the guidelines of the institutional ethics committee. All authors attest that this manuscript or parts of this manuscript have not been and will not be submitted elsewhere for publication.

Best regards,

The corresponding author