Autoreject: Automated artifact rejection for MEG and EEG data (Supplementary material)

Here, we present additional material that may answer some questions that the reader might have when reading the main text.

ℓ_2 vs ℓ_∞ norm. : Why not use ℓ_2 norm instead of ℓ_∞ norm to report the quantitative results in Figure 6 or Figure 7? The reason is that the ℓ_2 norm will average across the sensors. If one sensor is badly corrupted, then this would not be obvious with the ℓ_2 norm because the average in the ℓ_2 norm computation conceals the isolated problematic sensors with large artifacts. However, as the ℓ_∞ norm captures the worst sensor, it can be used to visualize pathological cases where even one sensor is corrupted. In Figure S1, we reproduce Figure 6 using the ℓ_2 norm instead of ℓ_∞. We can observe that, although the pattern remains the same, it is much less clear where one method outperforms the other. Even where *autoreject* isn't performing as well, it is not visible due to the averaging effect.

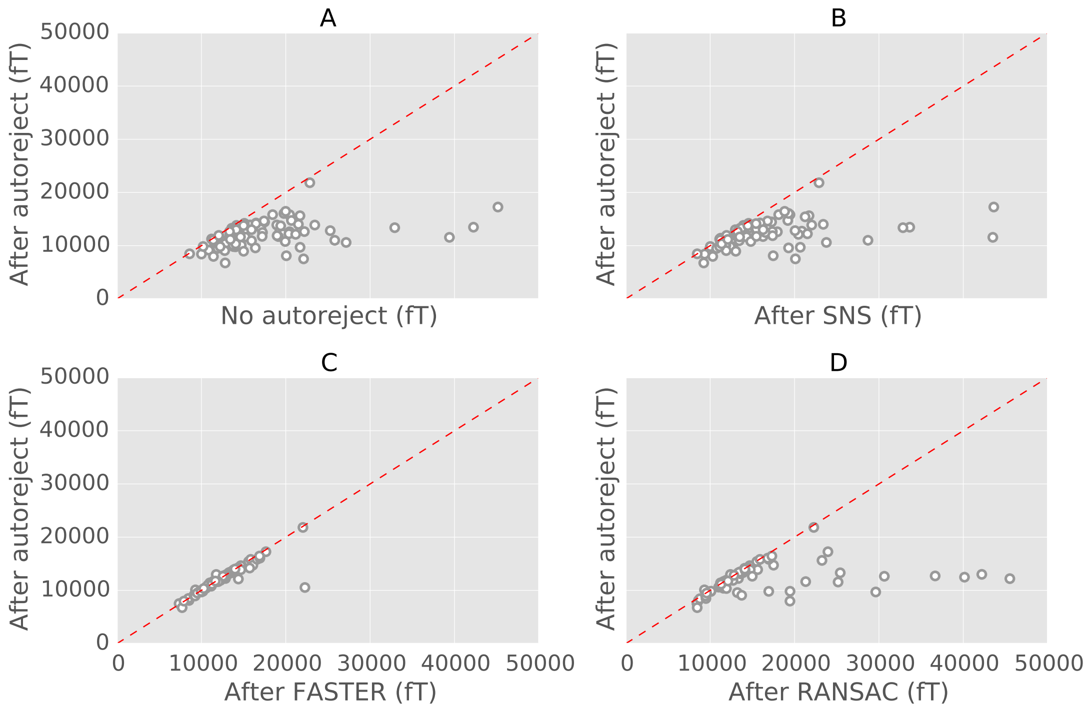

Figure S1: Scatter plots for the results with the HCP data. This figure uses the same data as in Figure 6 from the main text, but with $\|\cdot\|_2$ norm instead of the $\|\cdot\|_\infty$ norm for computing the difference between the HCP ground truth and the method. As before, each circle is a subject. (A) *autoreject (local)* against no rejection, (B) *autoreject (local)* against Sensor Noise Suppression (SNS) (SNS), (C) *autoreject* against FASTER, (D) *autoreject (local)* against RANSAC. Data points below the dotted red line indicate subjects for which *autoreject (local)* outperforms the alternative method.