I'm systematically looking at the effect of duration to the activation we find in the rACC for XS. All GLM have the same onsets (cue, discarded trials, easy trials, hard trials and feedback). Hard trials are modulated with the same regressors (exchange X, switch S, the interaction XS, and distance to goal Z).

**Using the canonical function (HRF) with an event of duration 0**
This more or less shows the same effect that we originally found in rACC, but weaker. In the poster at HBM, we reported a statistic of 5.81 and the cluster was bigger.
Here the we have a statistic of 4.57

Contrast XS>0 ; HRF duration 0 ; $p<10^{-3}$
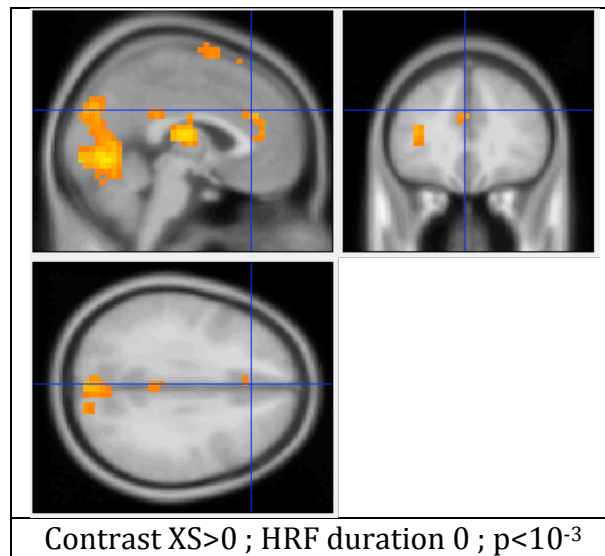
Using the canonical function (HRF) with an event of duration 3
Using a duration of 3 seconds, most effects disappear (including rACC, occipital, cerebellum and motor).

Contrast XS>0 ; HRF duration 3s ; $p<10^{-3}$
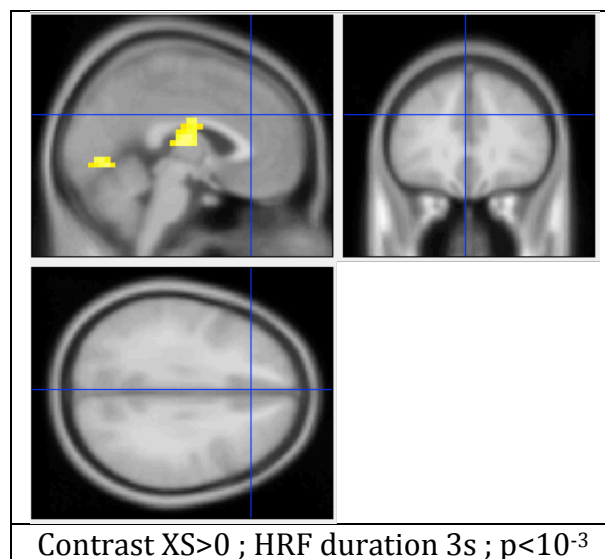
Using a FIR with 8 samples in the interval 0–7s
We get to see the shape of the activation across time. The rACC is maximally activated at t=4s and decreases from there.

Contrast $XS_{t=4}>0$; $FIR_{t=\{0..7\}}$; $p<10^{-3}$

Peristimulus signal
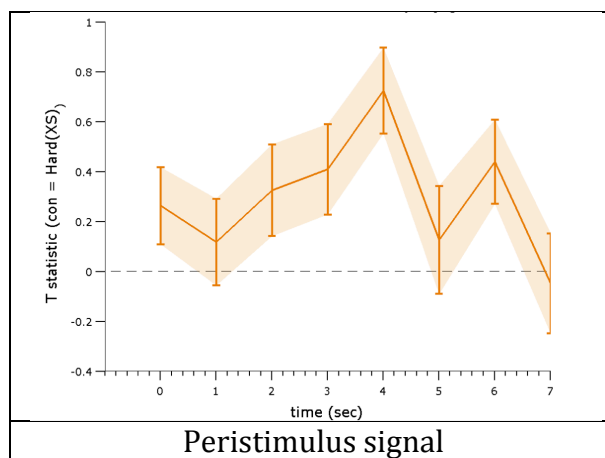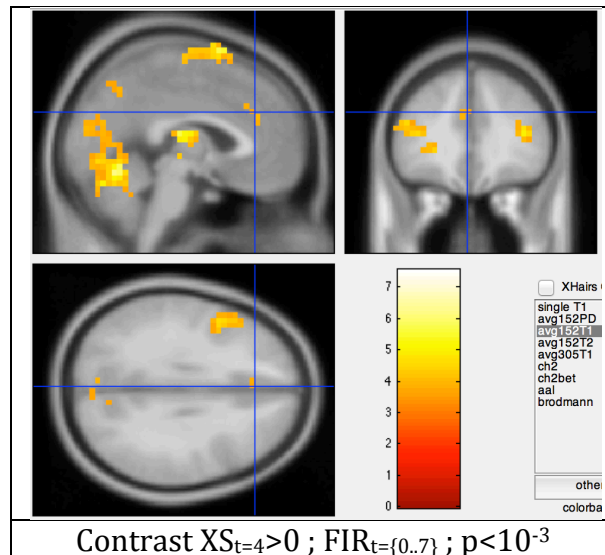
Summary
Increasing the duration of the event will make the GLM even worse. I still have no clue of how or why we got such high values for the poster.

Possible solutions :
– Using first order derivatives
– Going back to the very first GLM and systematically compare everything