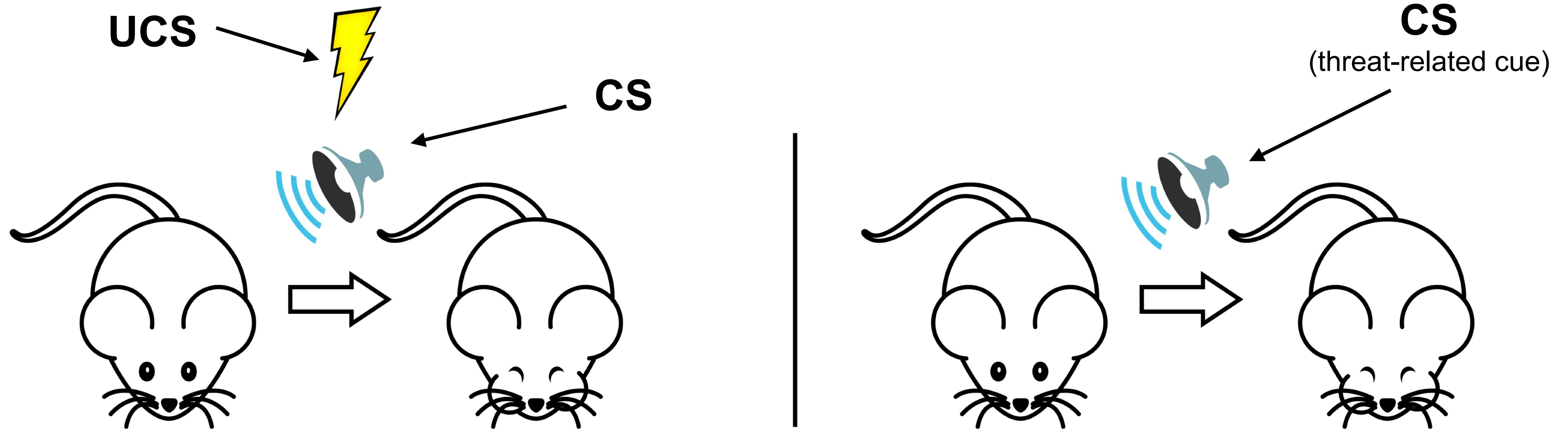


Fear acquisition induces spatio-temporal patterns of activity from salience to default mode network

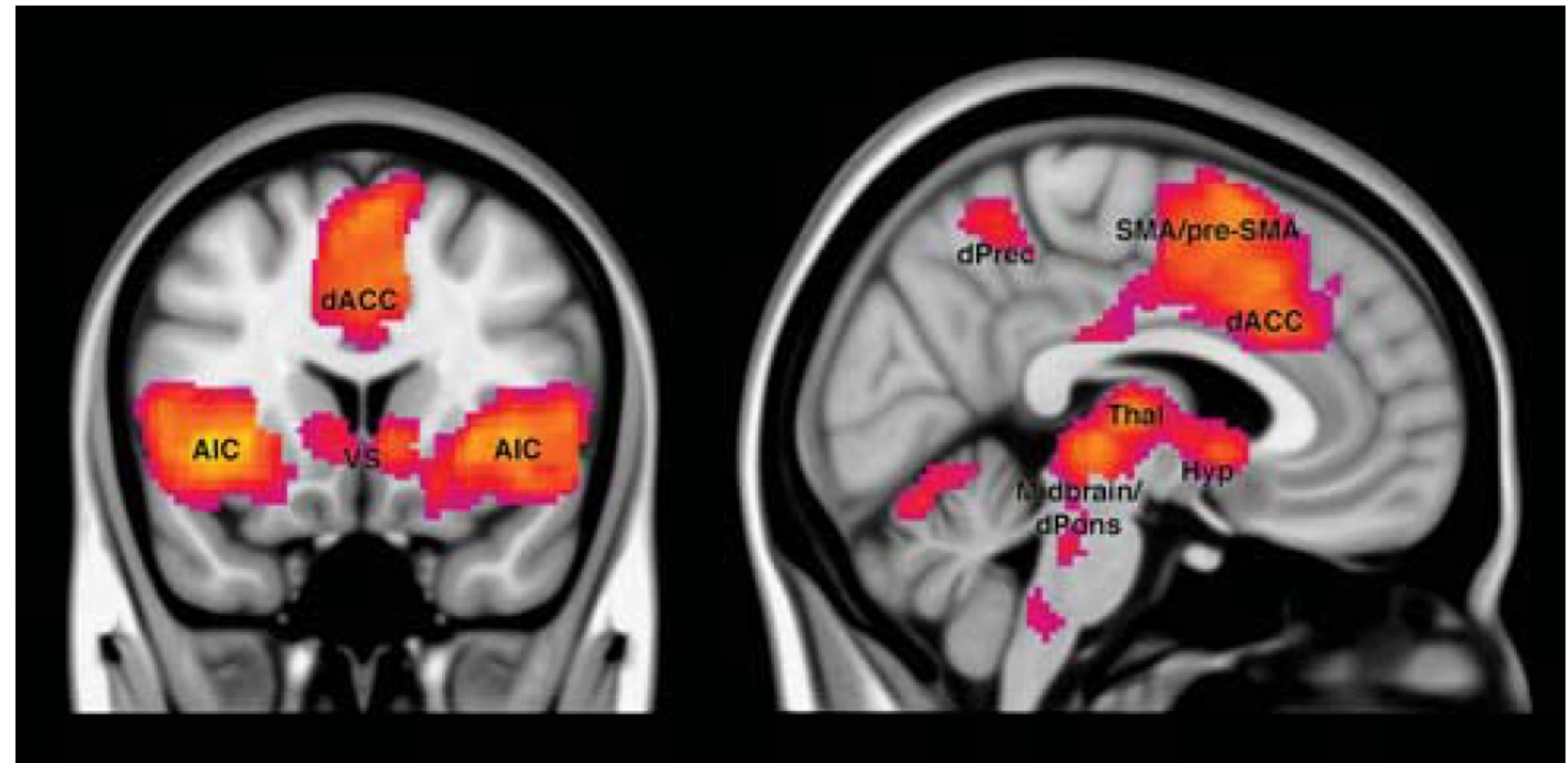
**Blazej M. Baczkowski, Sabine Oligschlaeger, Michael Gaebler,
Susanne Erk, Henrik Walter, Arno Villringer, Ilya M. Veer, &
Daniel S. Margulies**



Fear conditioning involves pairing an aversive stimulus (UCS) with a neutral stimulus (CS)

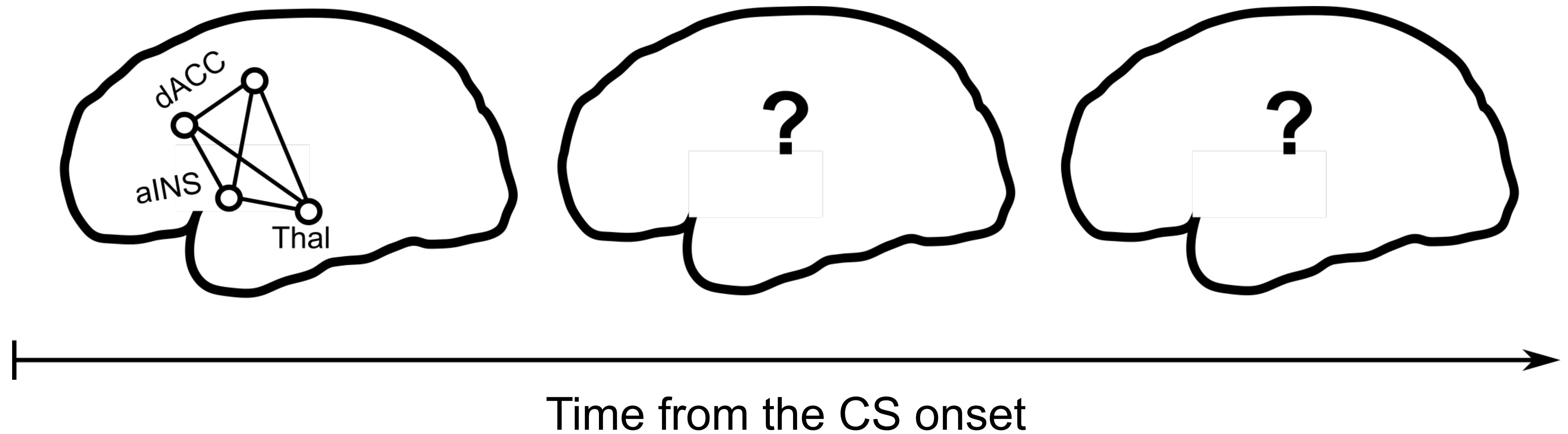


Threat-related cue (CS) activates the salience network

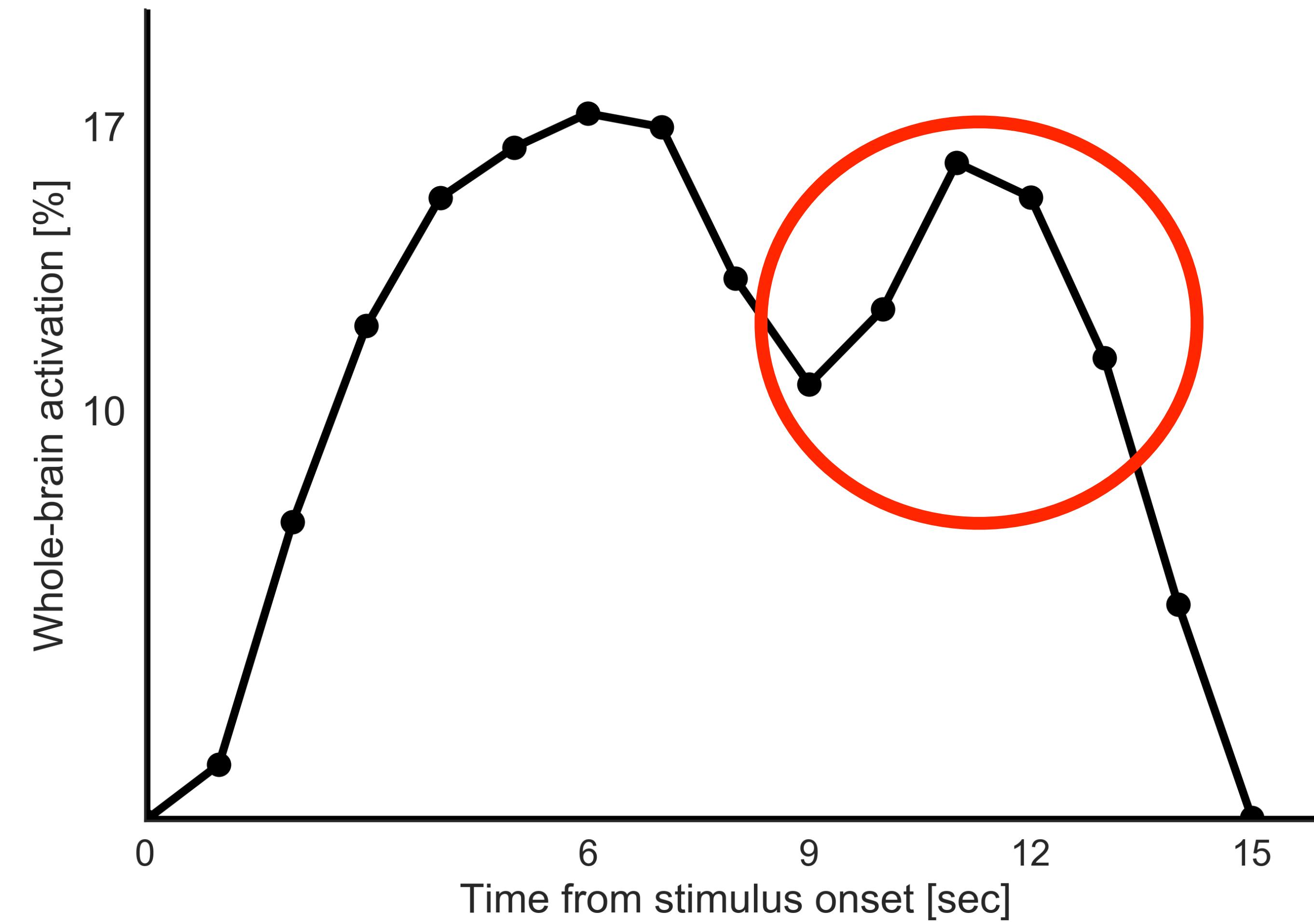


Fullana et al. (2016)
Mol. Psych.

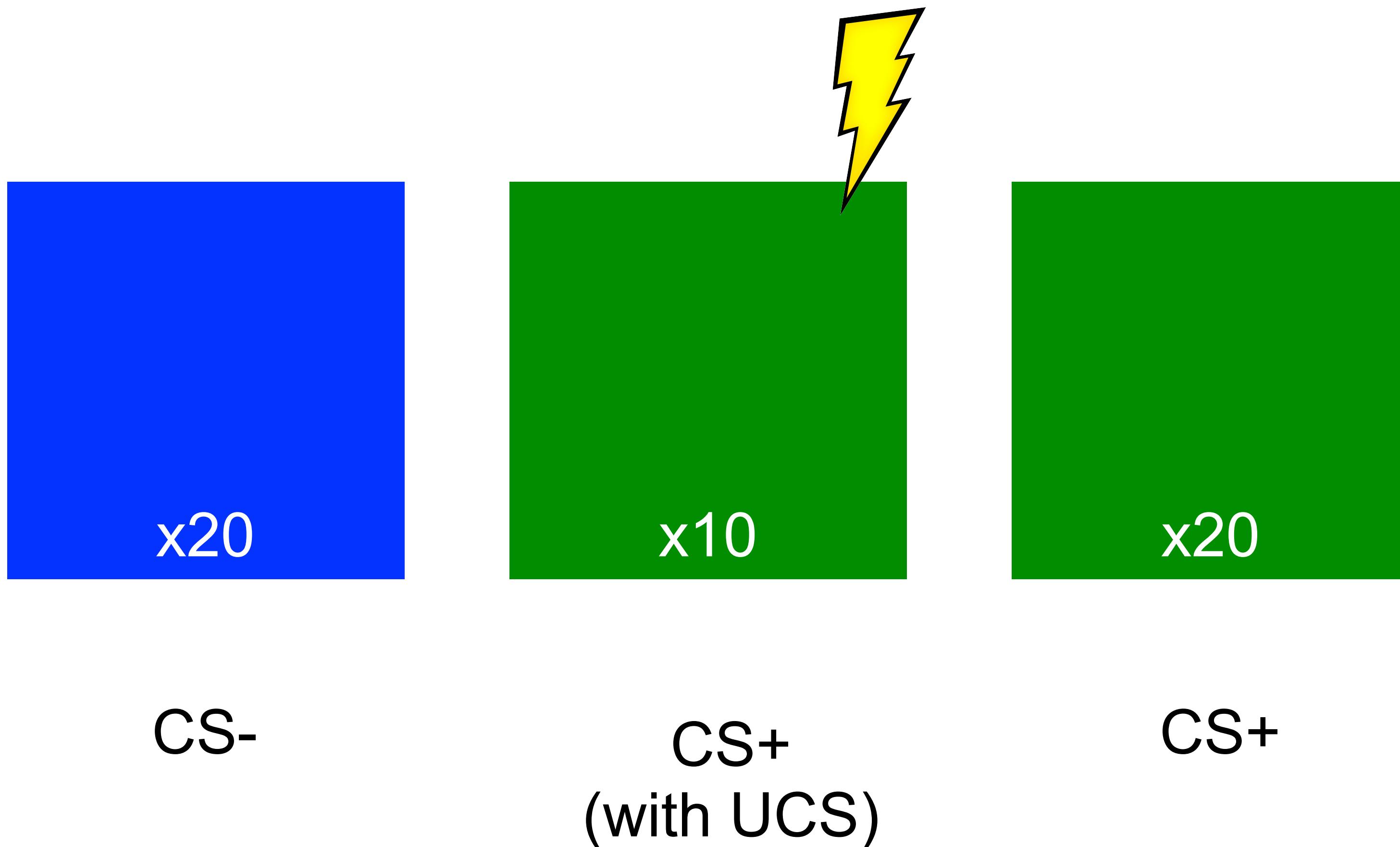
Here, we explored whether threat-related cue (CS) induces subsequent activation beyond the salience network



We found consistent late activation
induced by a threat-related cue (CS)



Learning associations was induced by an instructed delay conditioning task



Design

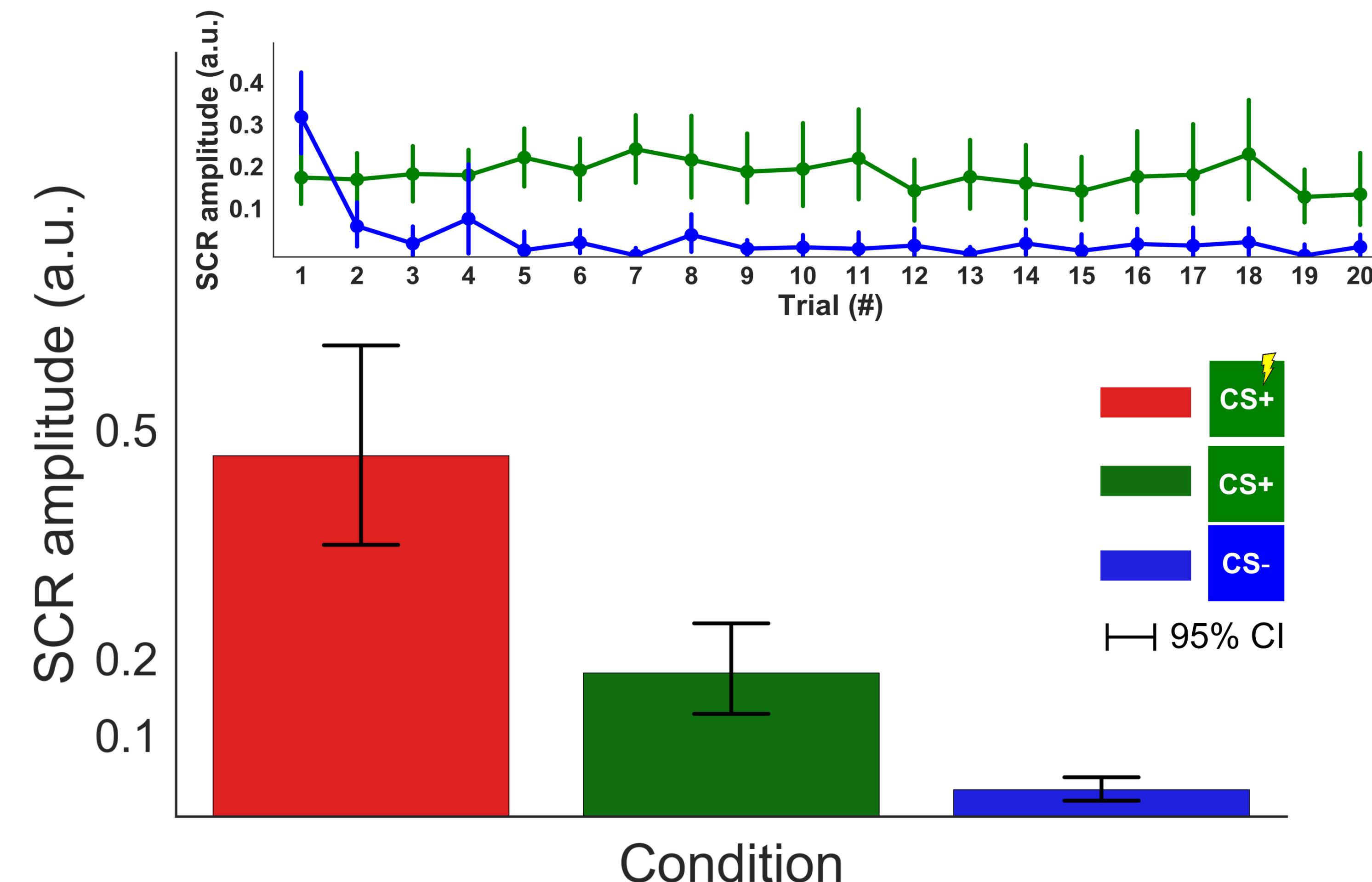
- 29 participants
- partial reinforcement
- UCS (electric shock)

fMRI parameters

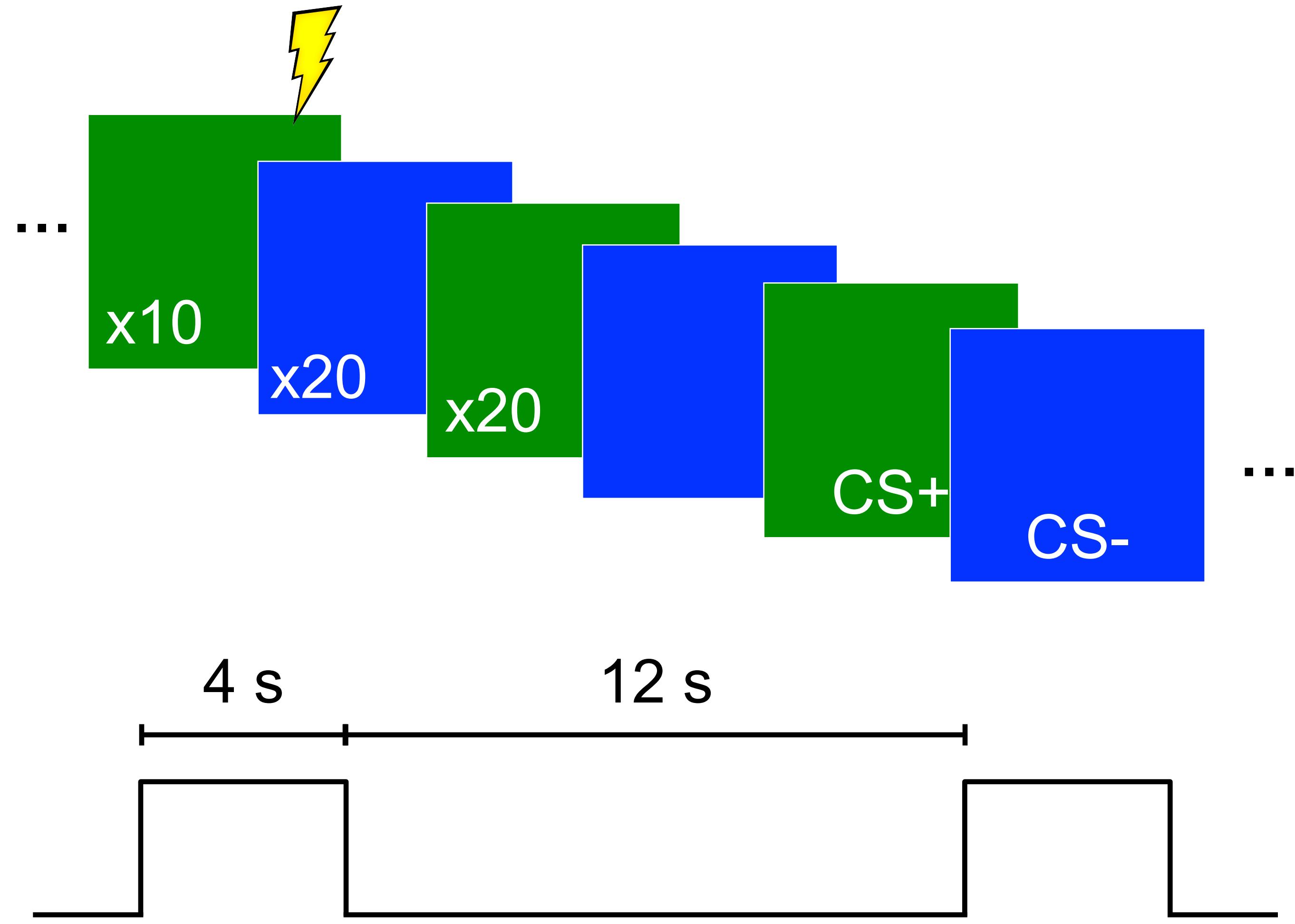
- 413 volumes
- TR=1.96 sec
- 39 axial slices
- sequential ascending
- $3.0 \times 3.0 \times 2.4$ mm

Bilkei-Gorzo, Erk et al (2013), J. Neurosci.

Skin conductance response (SCR) differentiated the three conditions



Long inter stimulus interval enabled us to investigate the late activation



Design

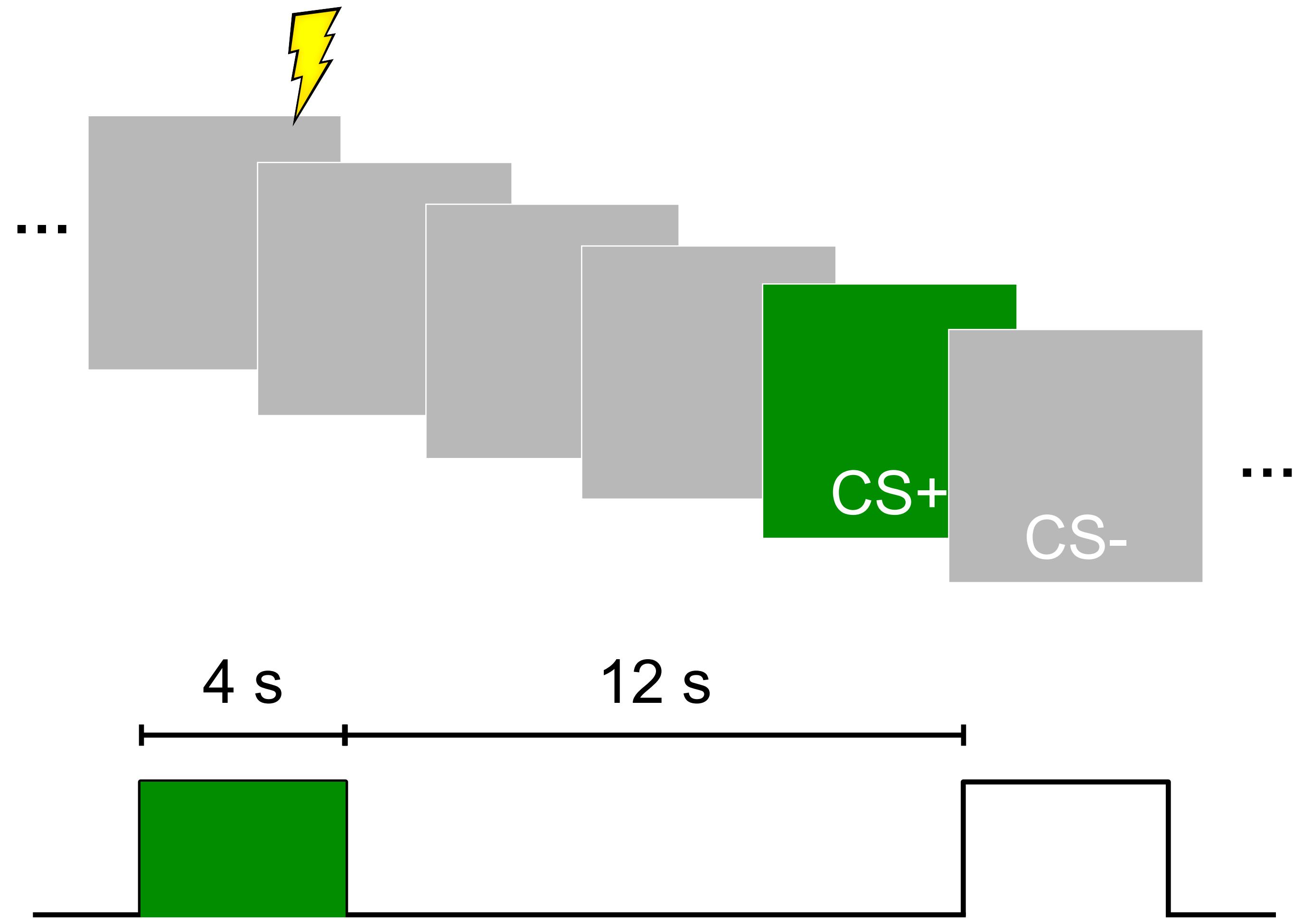
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Bilkei-Gorzo, Erk et al (2013), J. Neurosci.

Long inter stimulus interval enabled us to investigate the late activation



Design

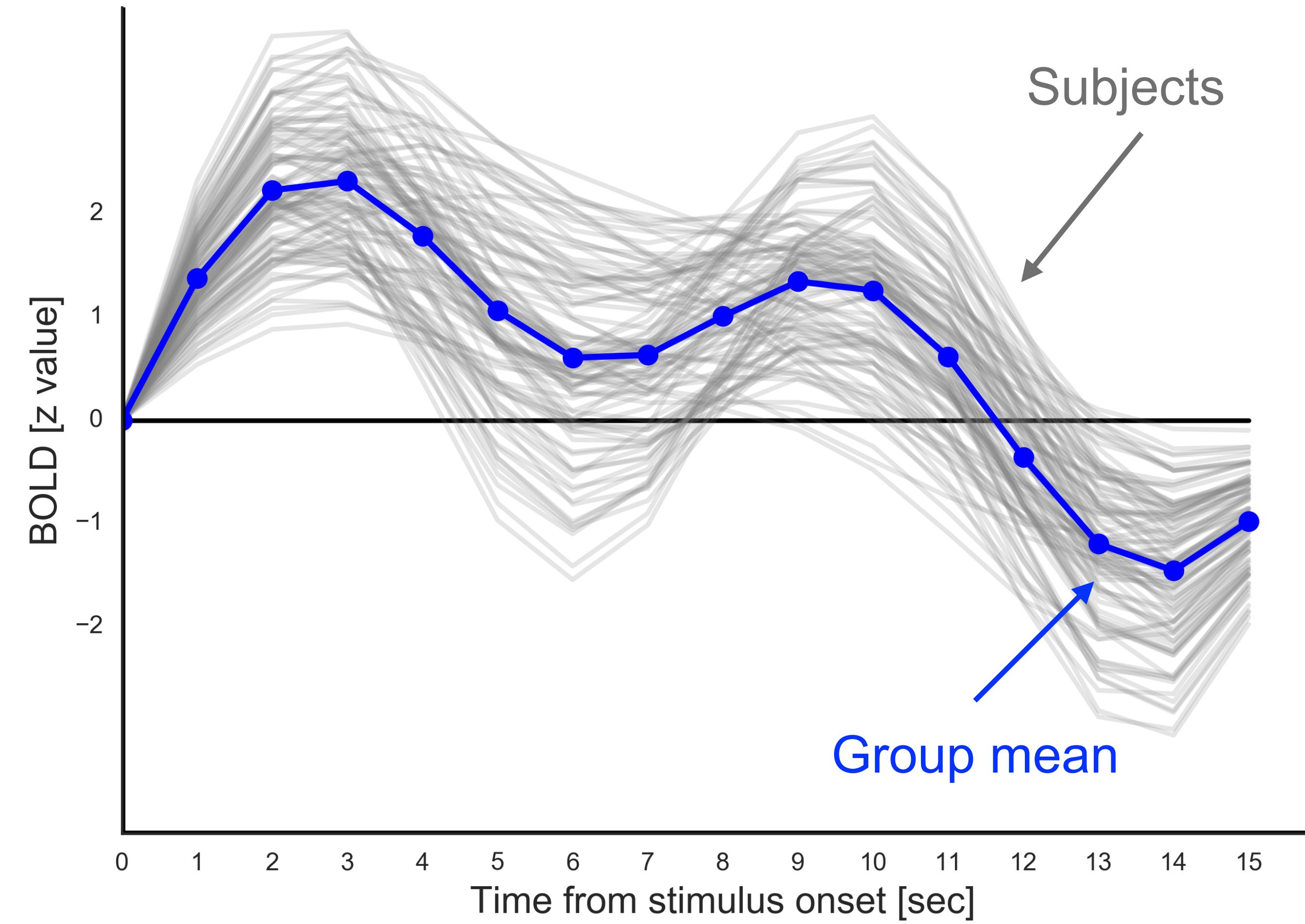
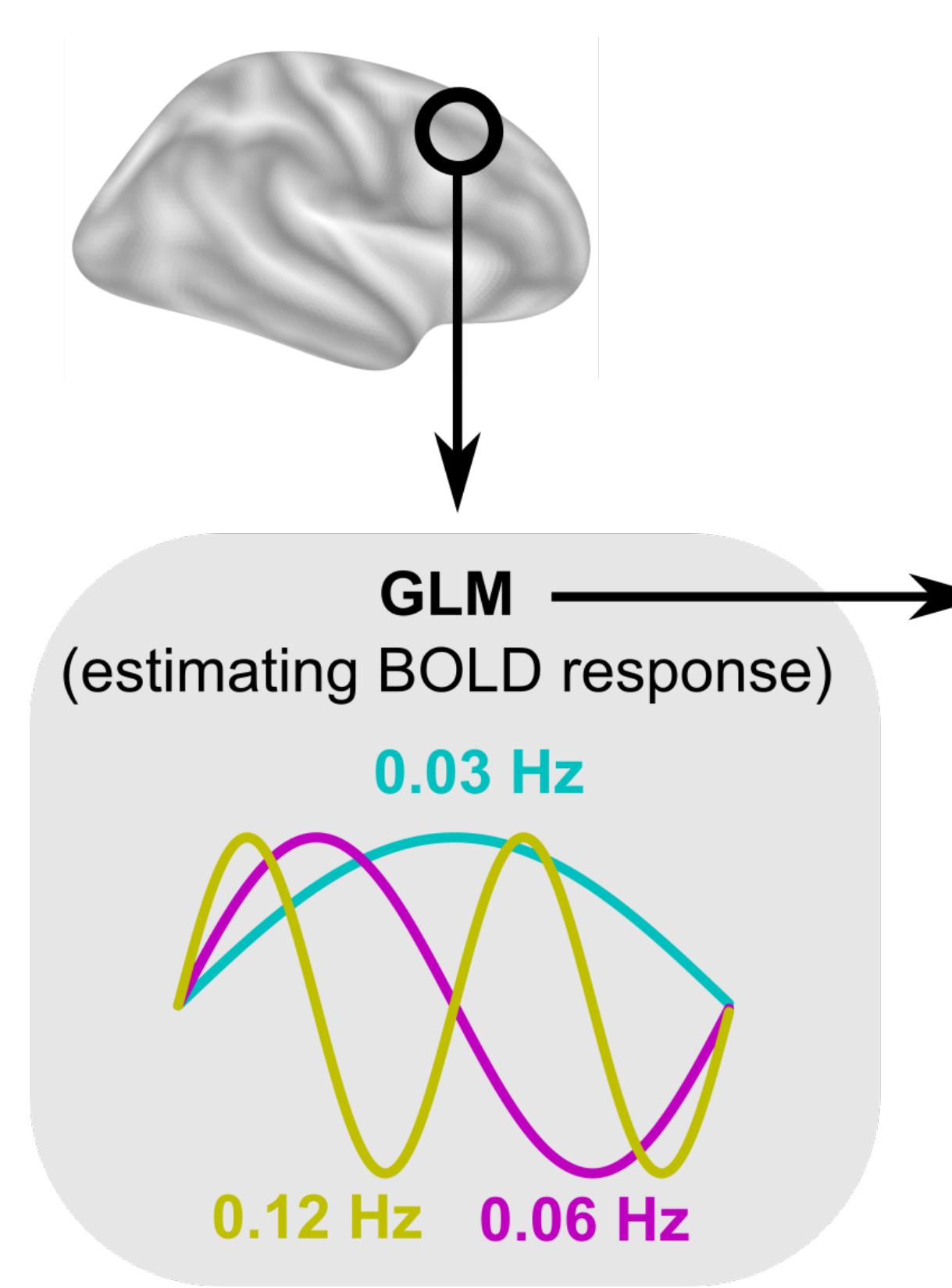
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fMRI parameters

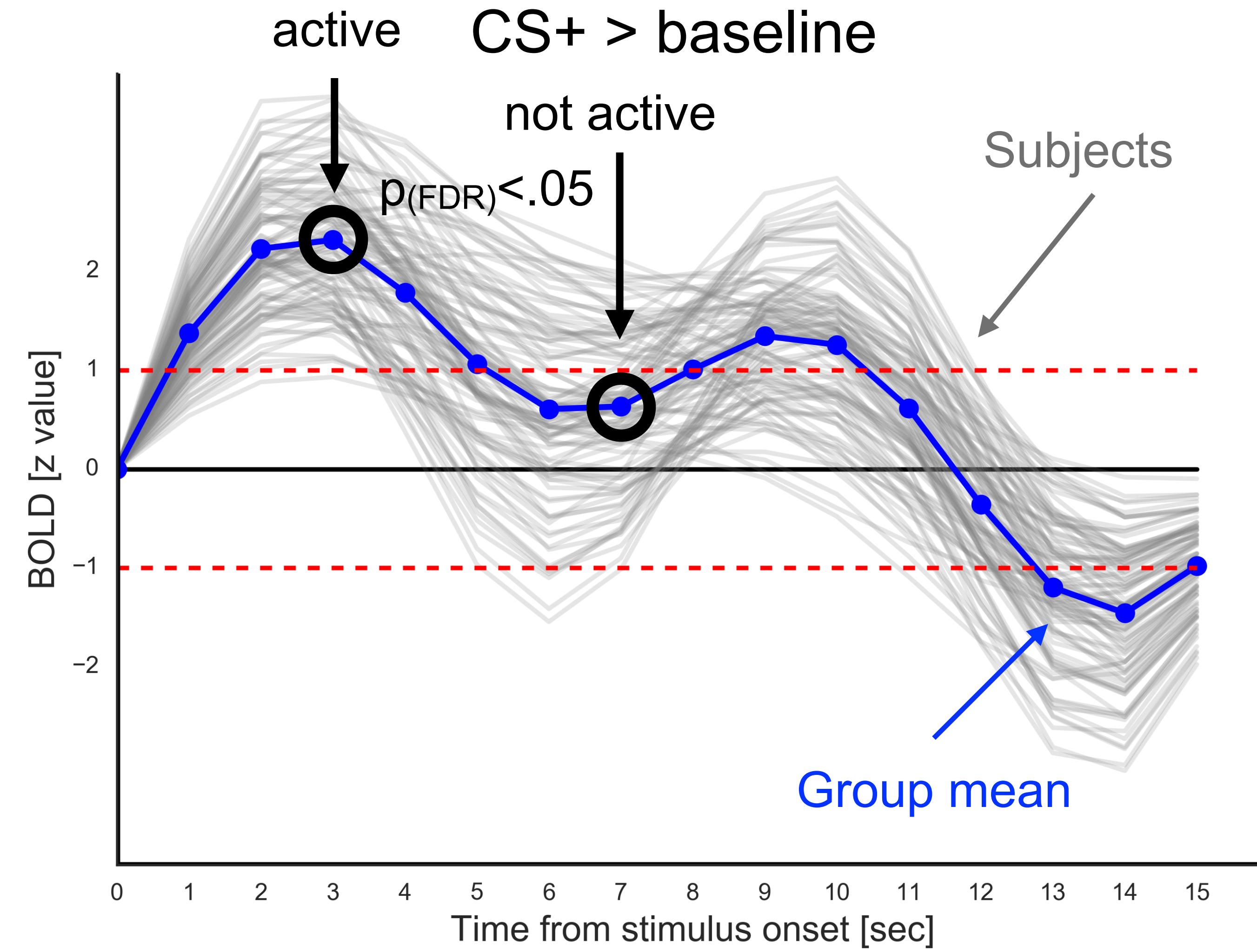
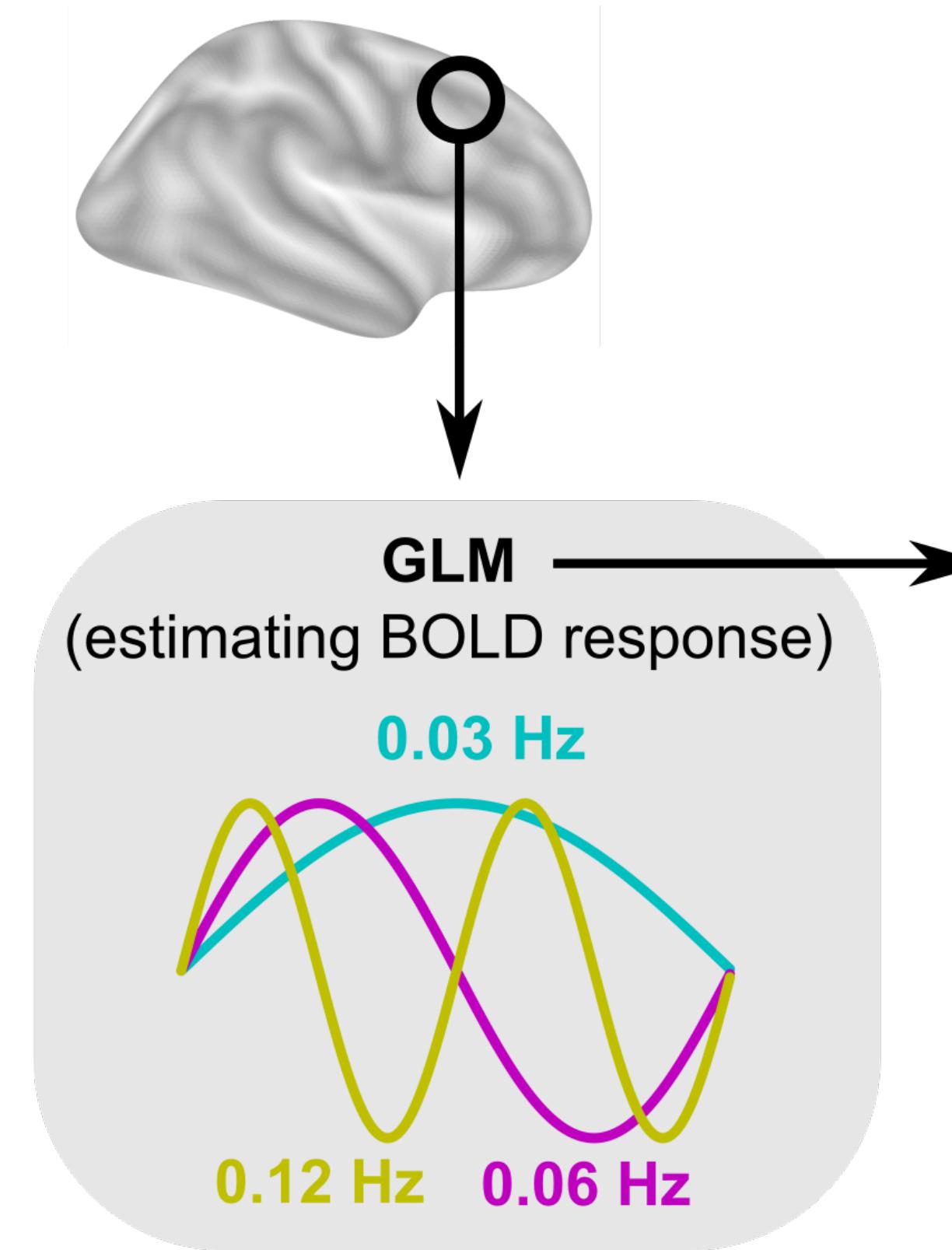
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Bilkei-Gorzo, Erk et al (2013), J. Neurosci.

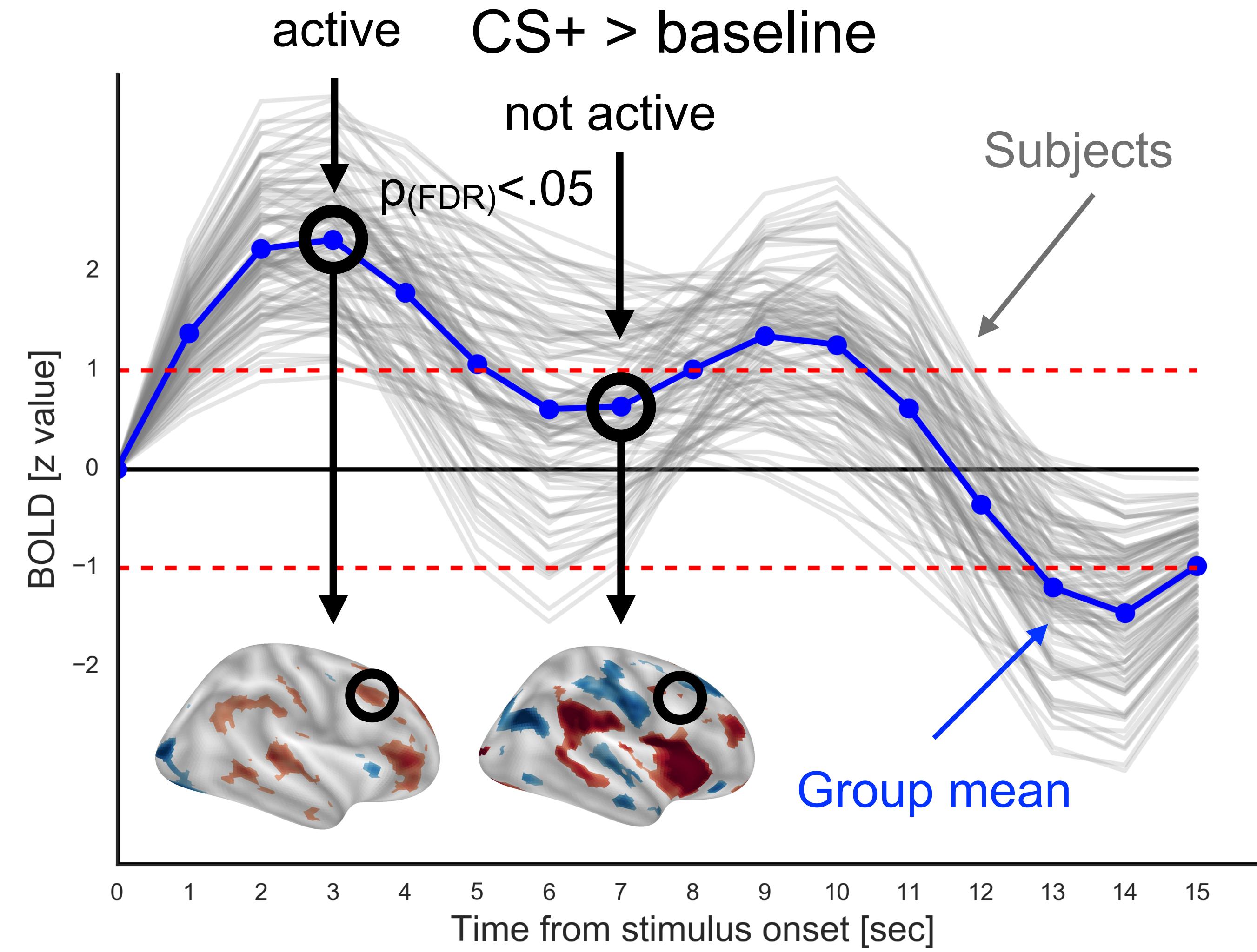
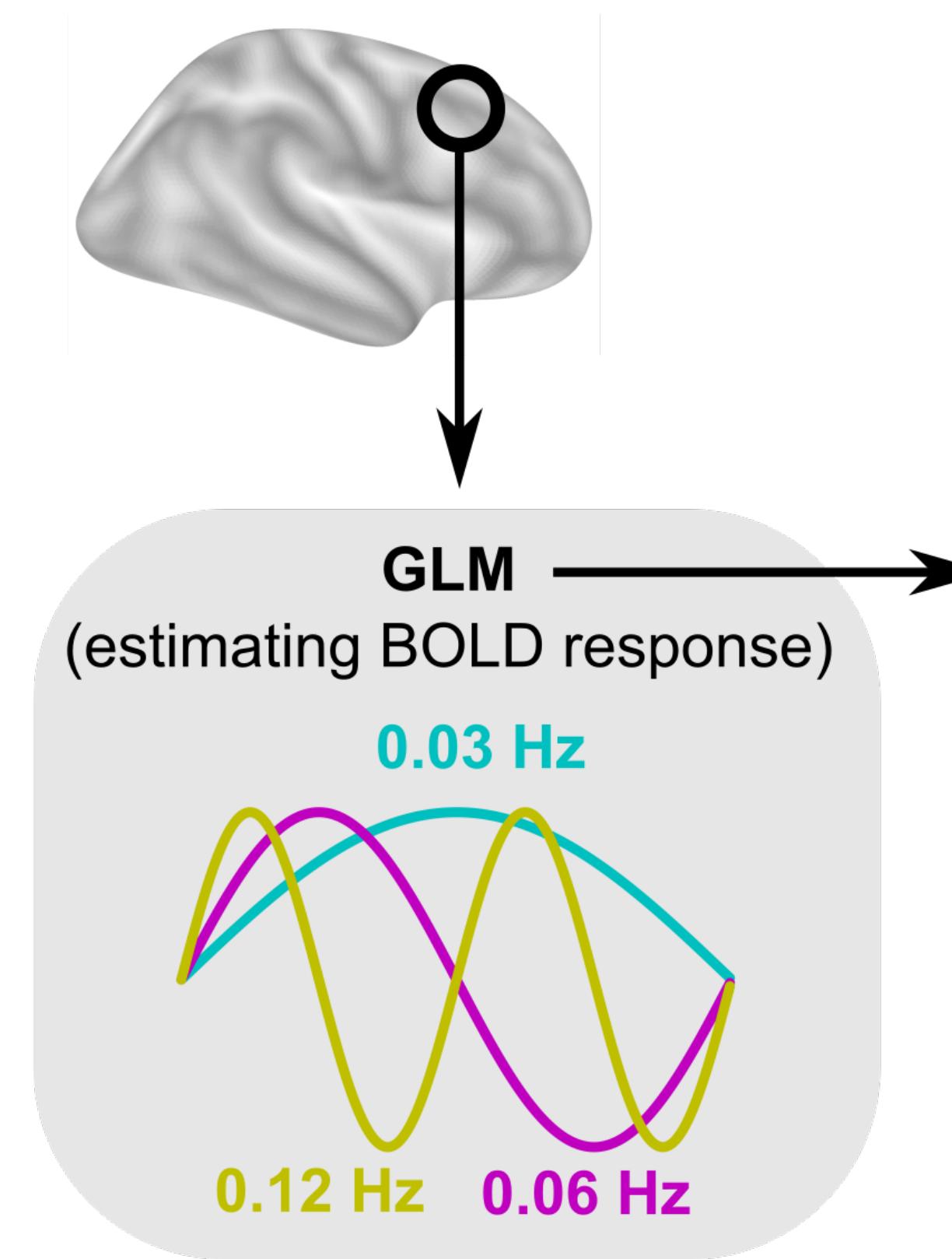
Consistent BOLD response across the group indicated stimulus-induced activity

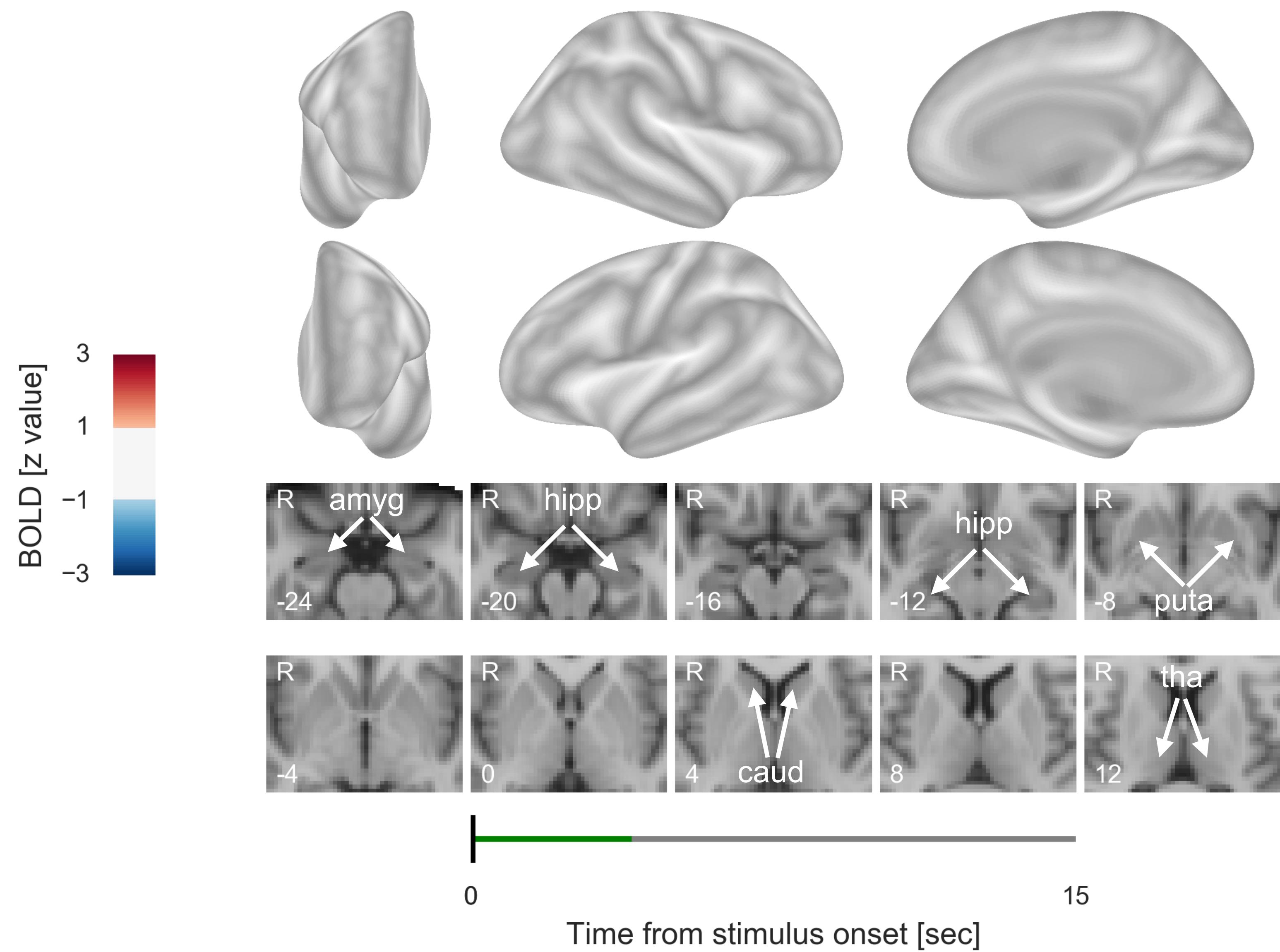


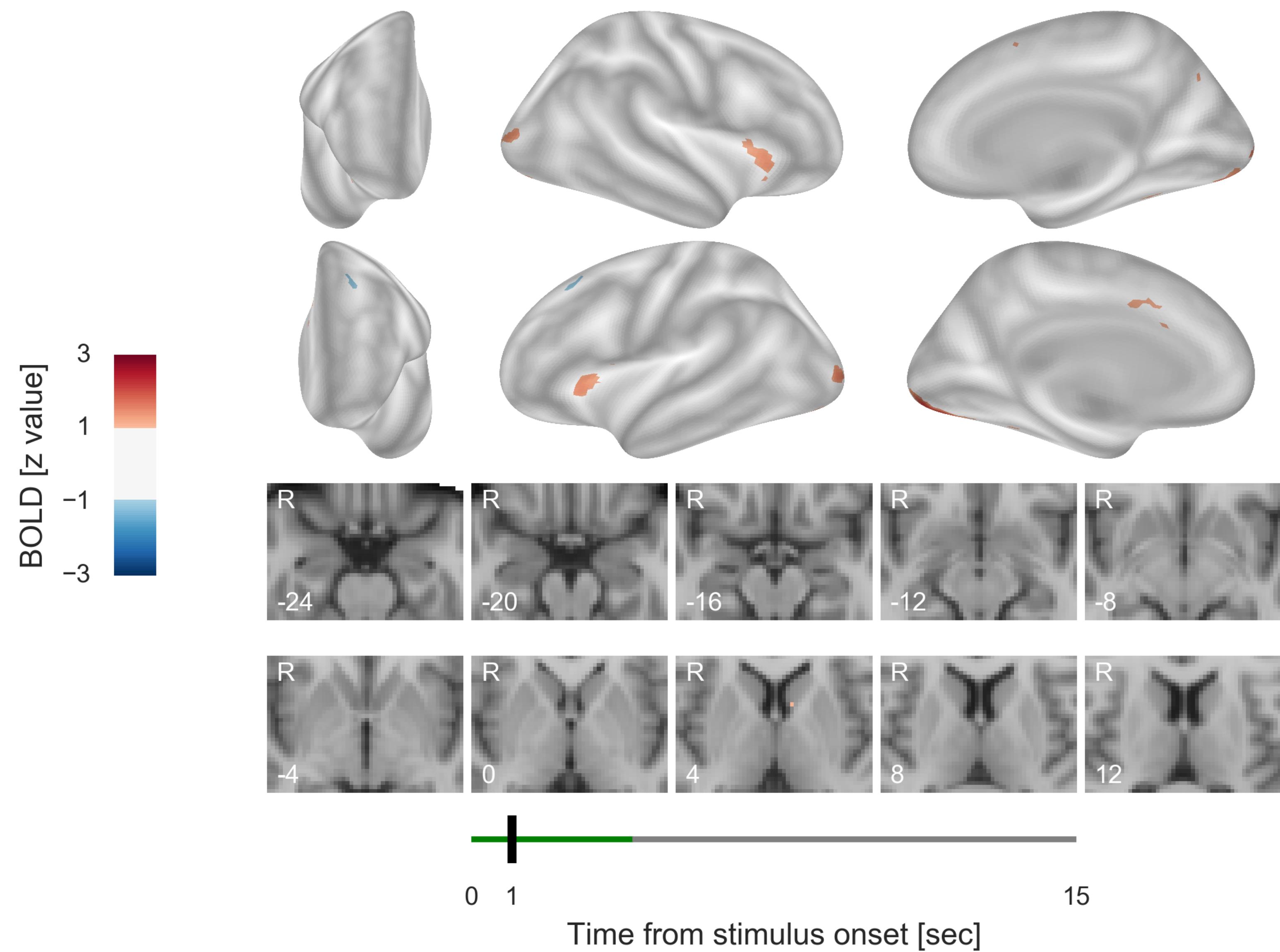
Consistent BOLD response across the group indicated stimulus-induced activity

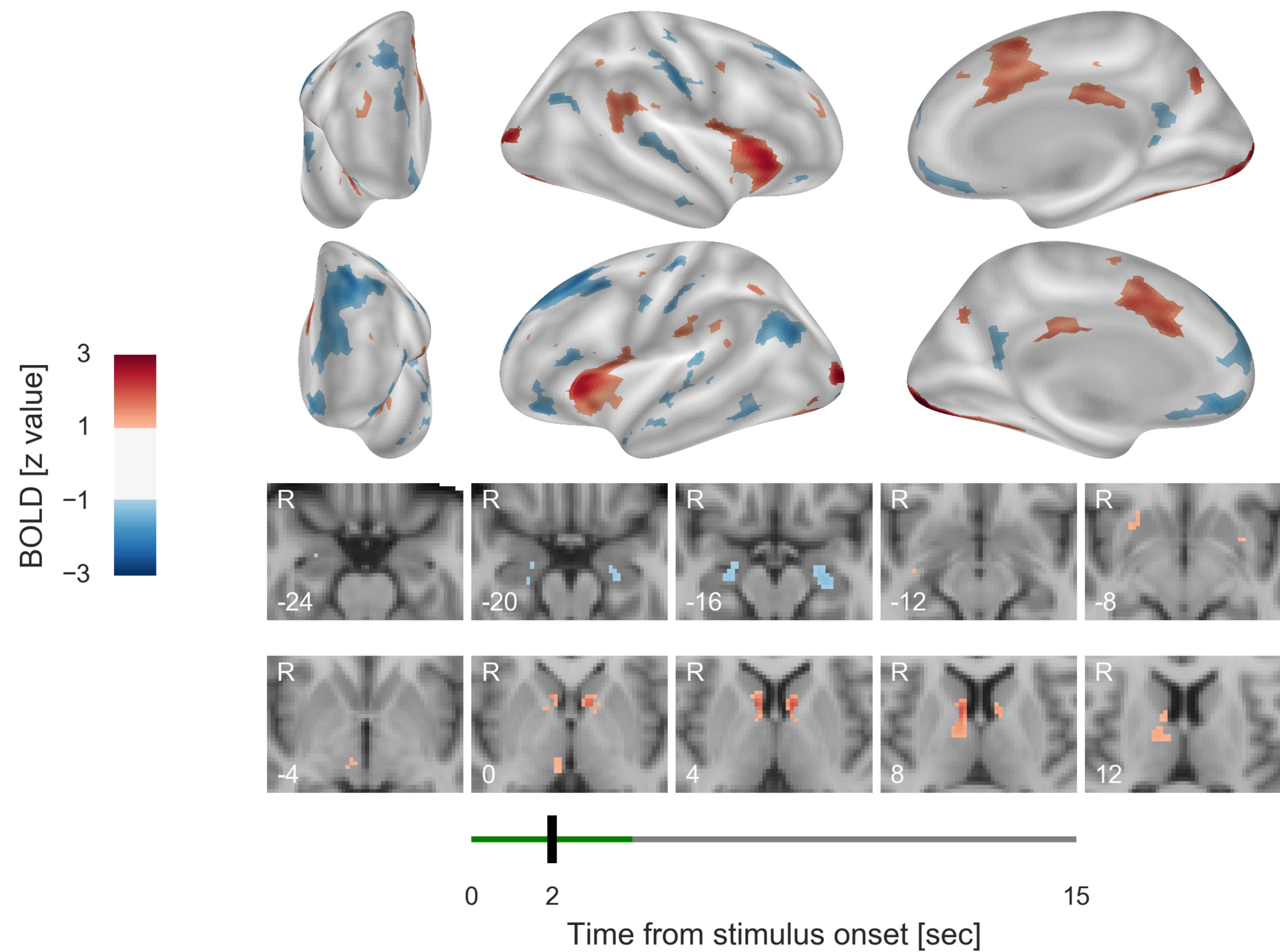


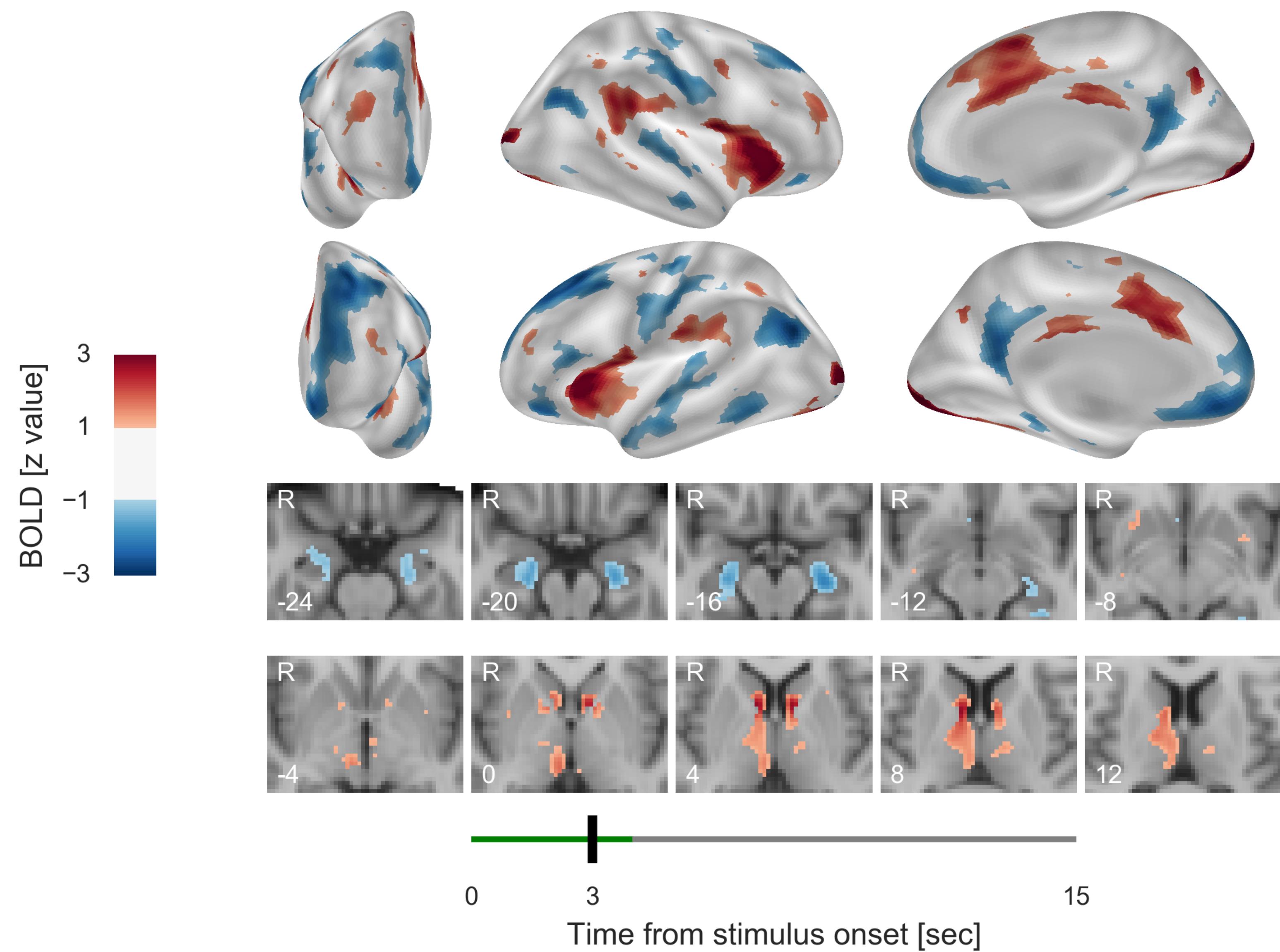
Consistent BOLD response across the group indicated stimulus-induced activity

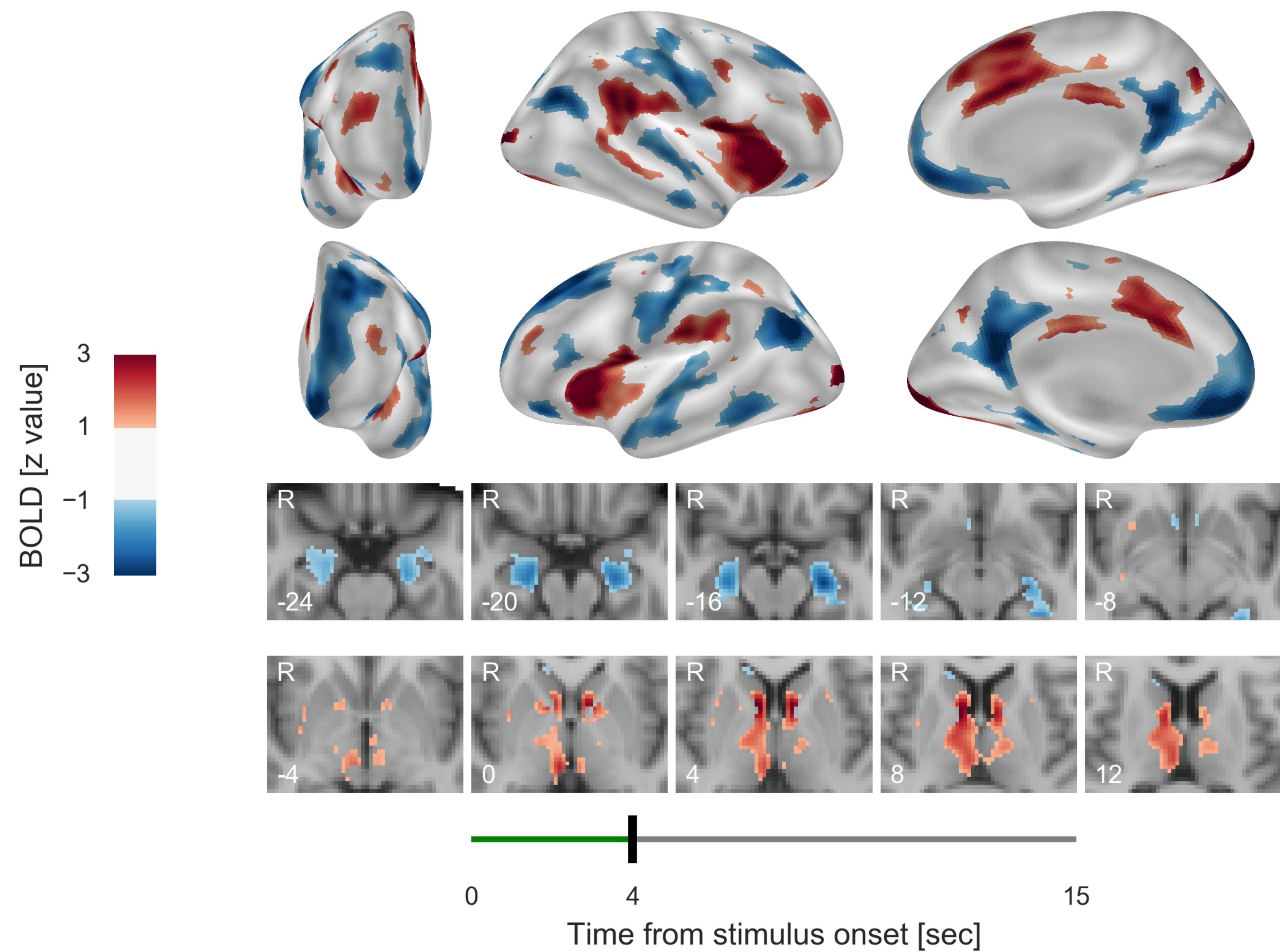


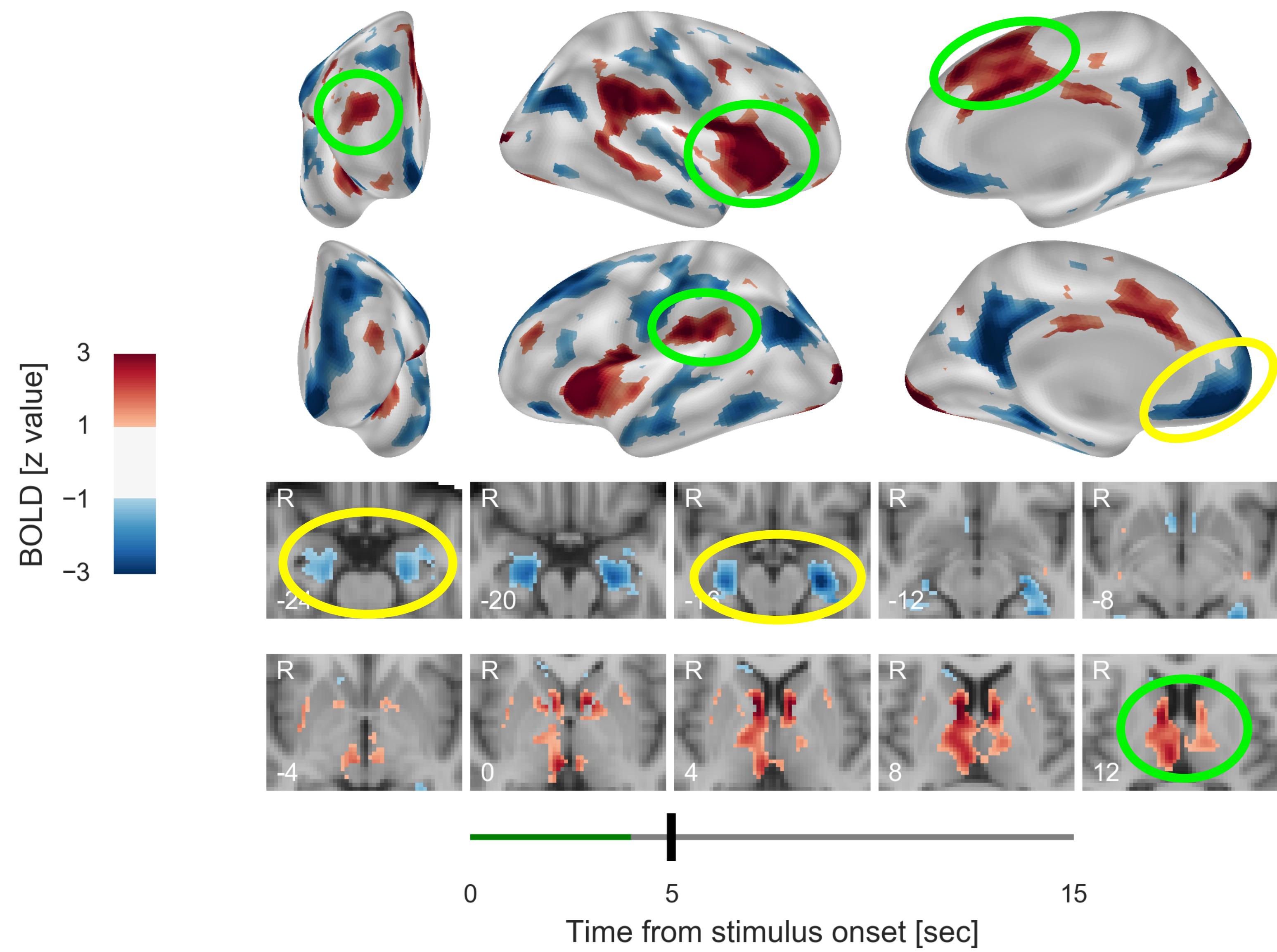


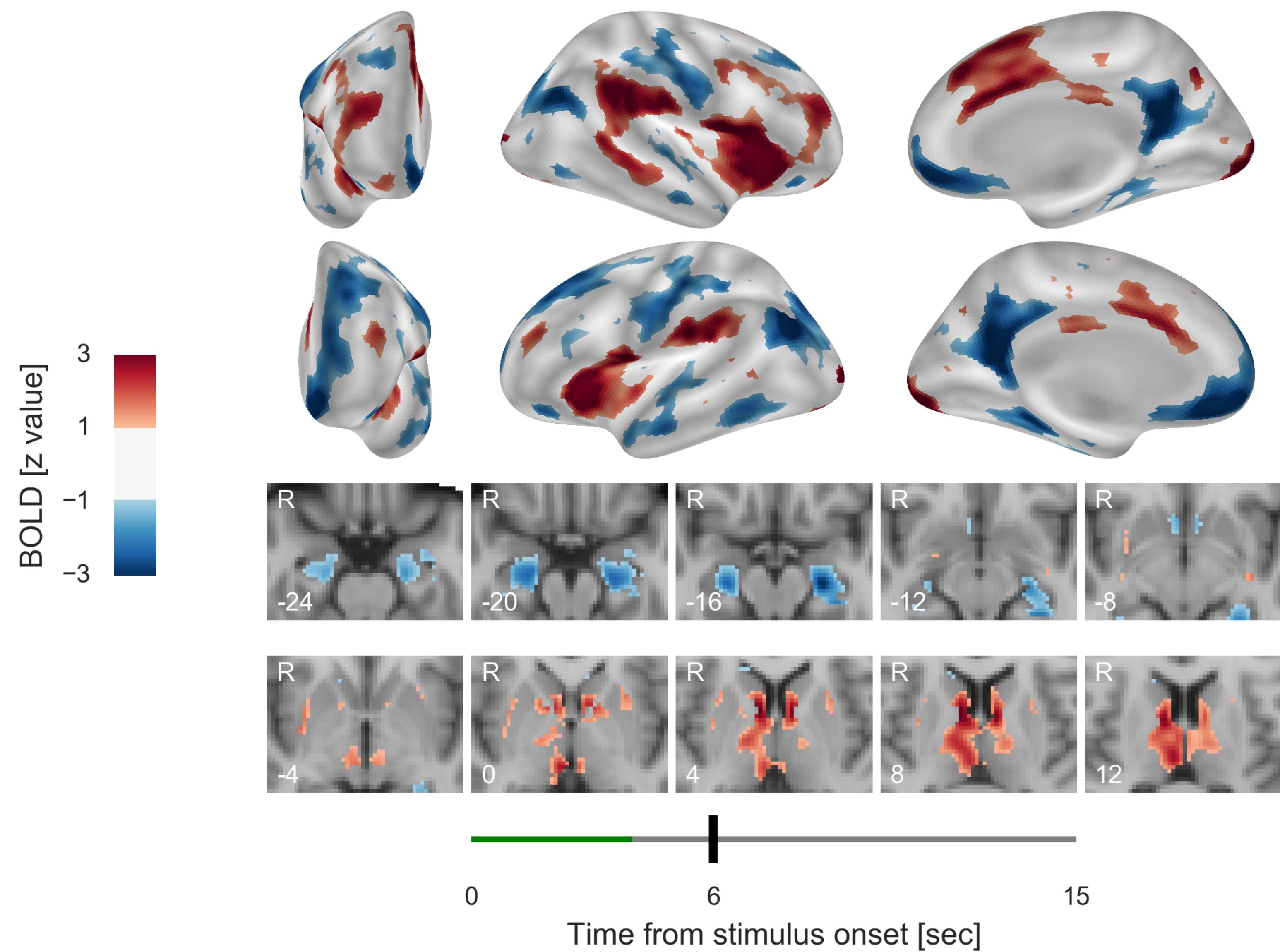


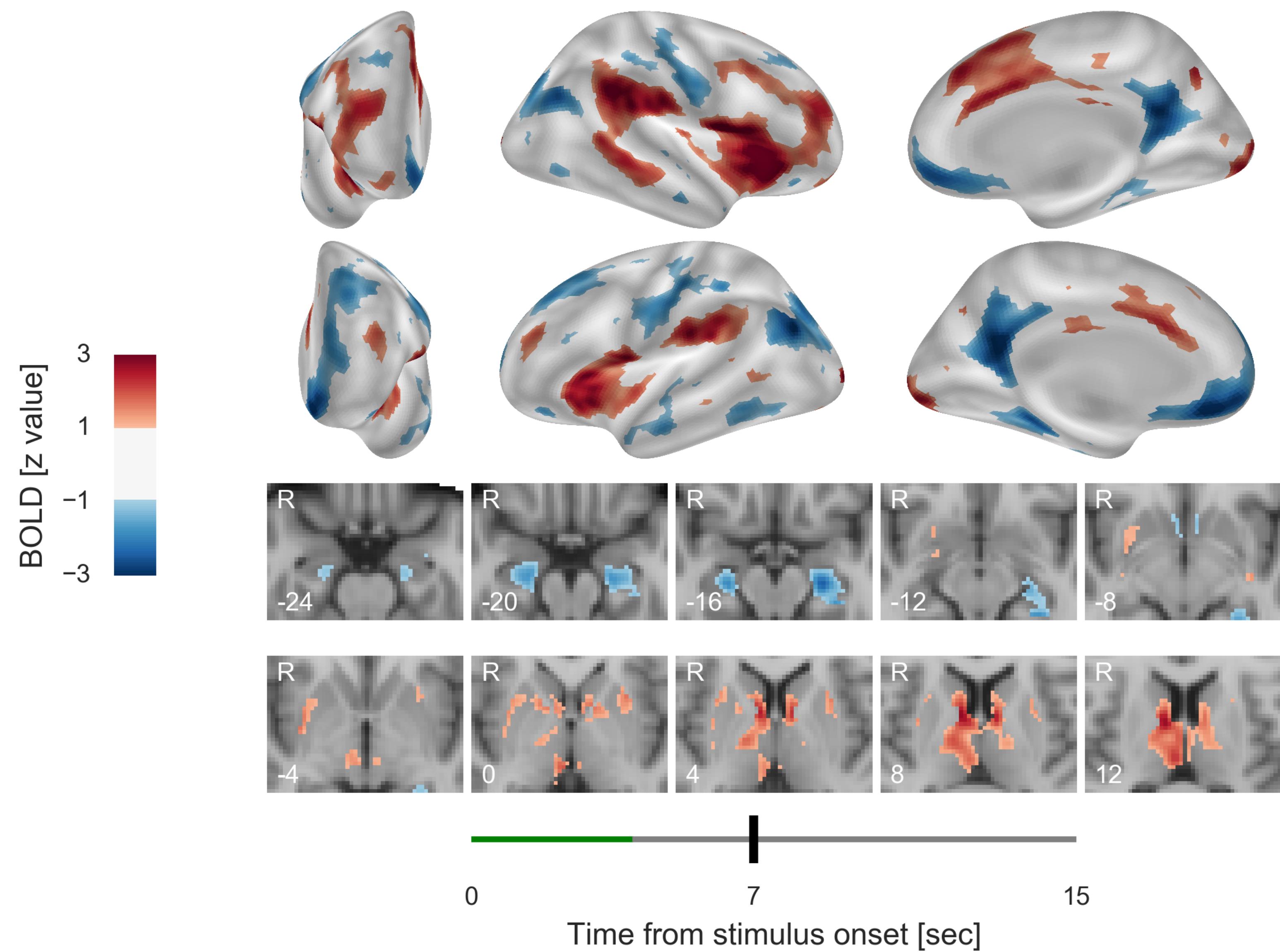


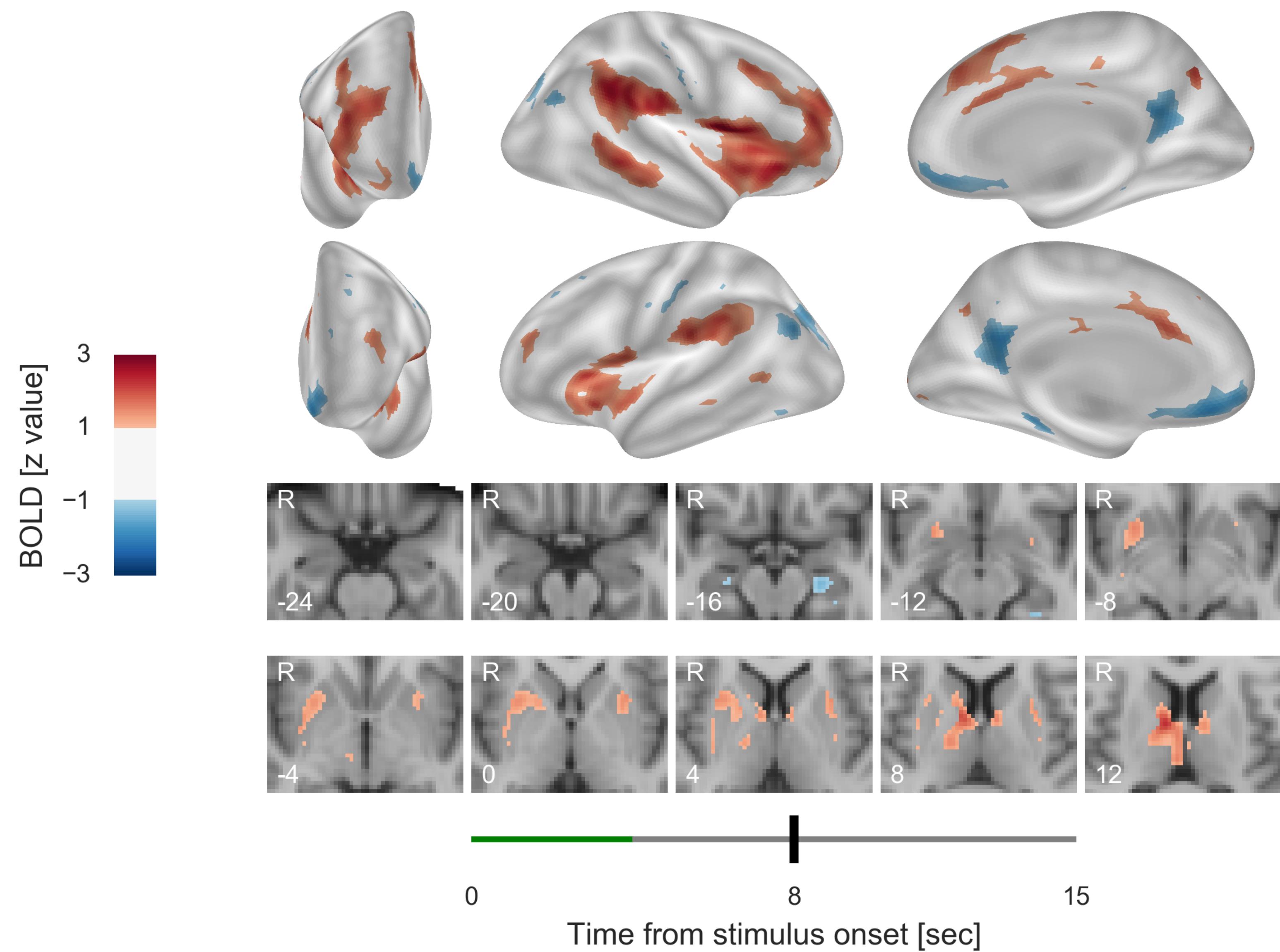


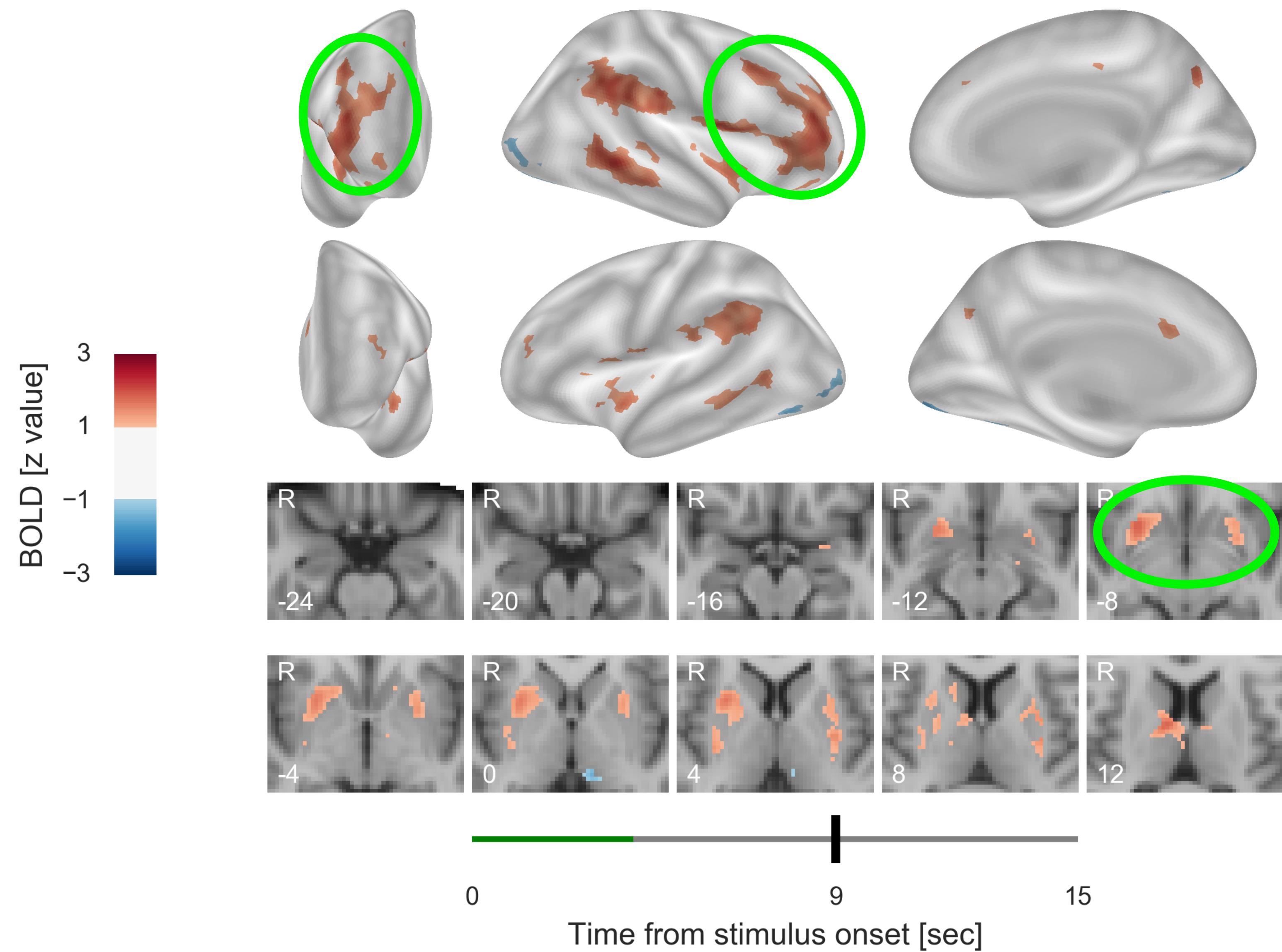


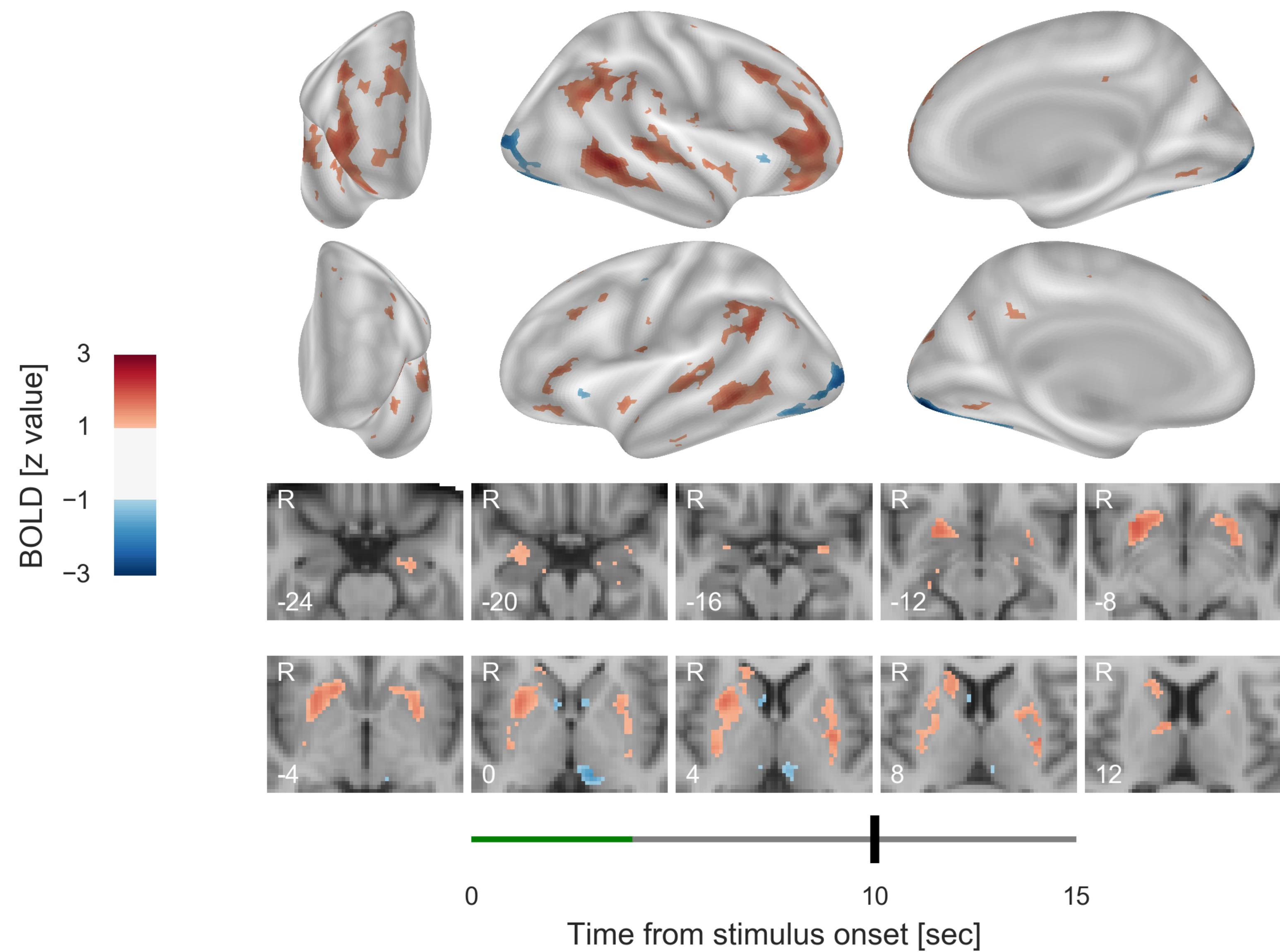


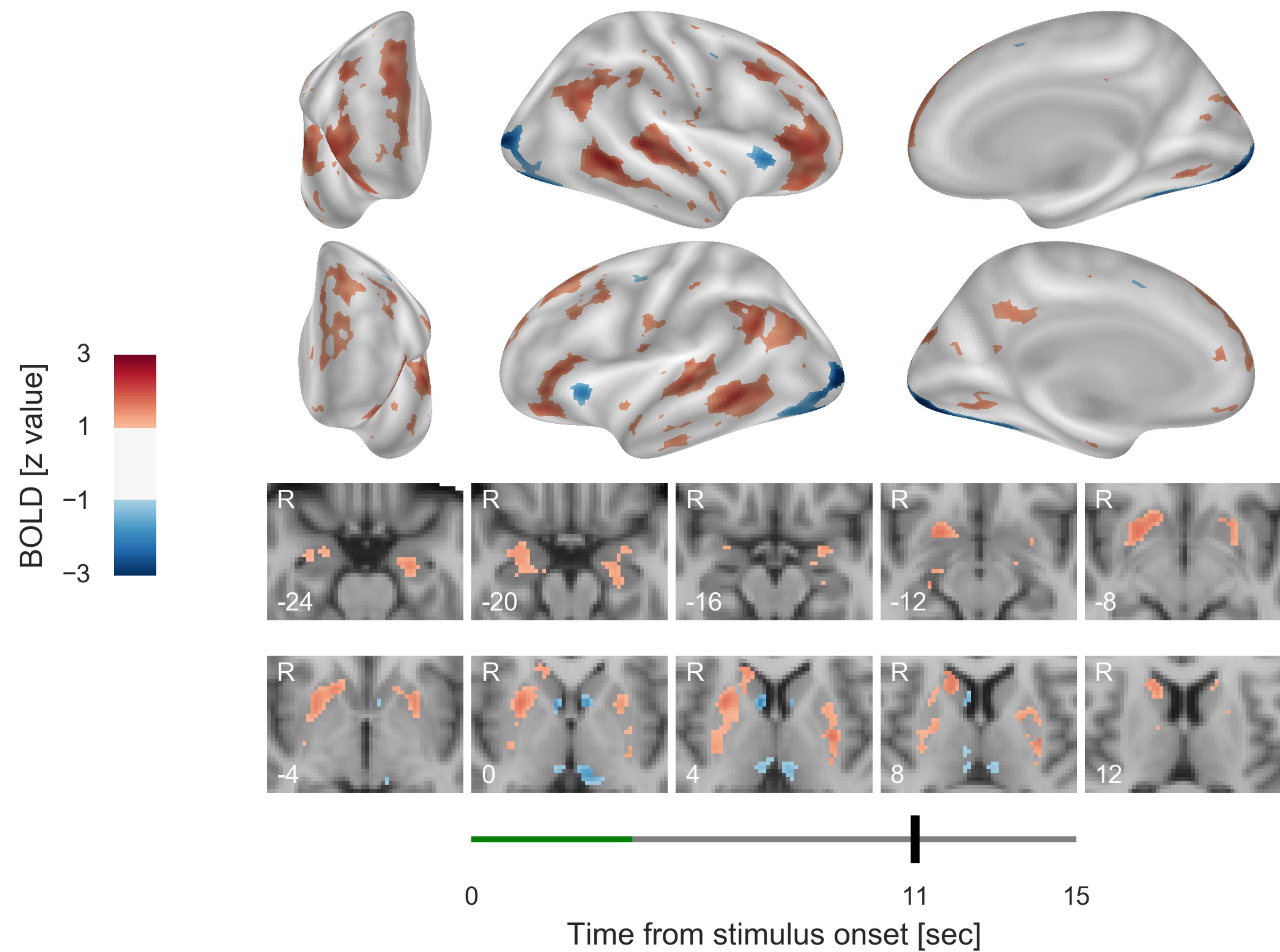


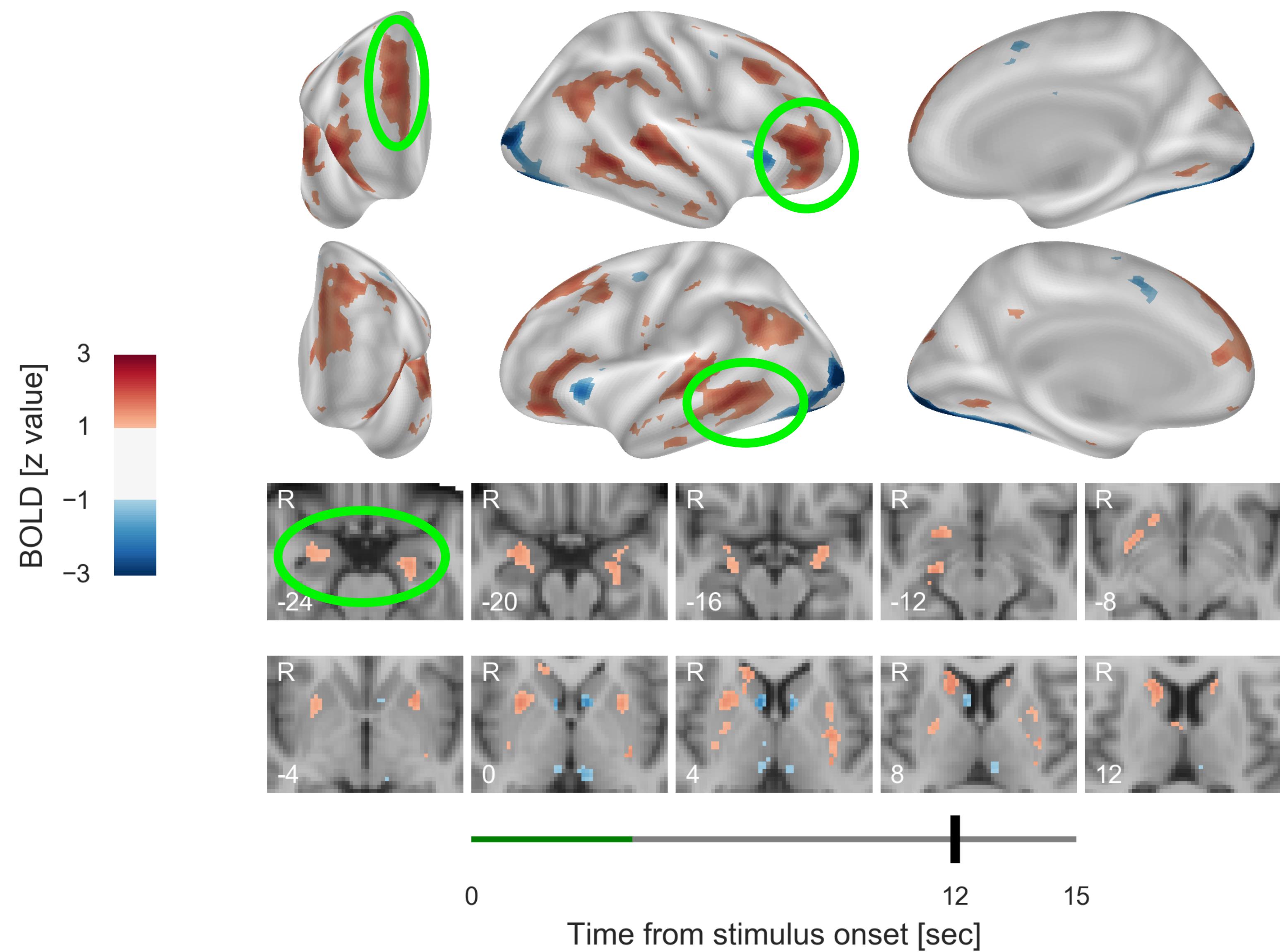


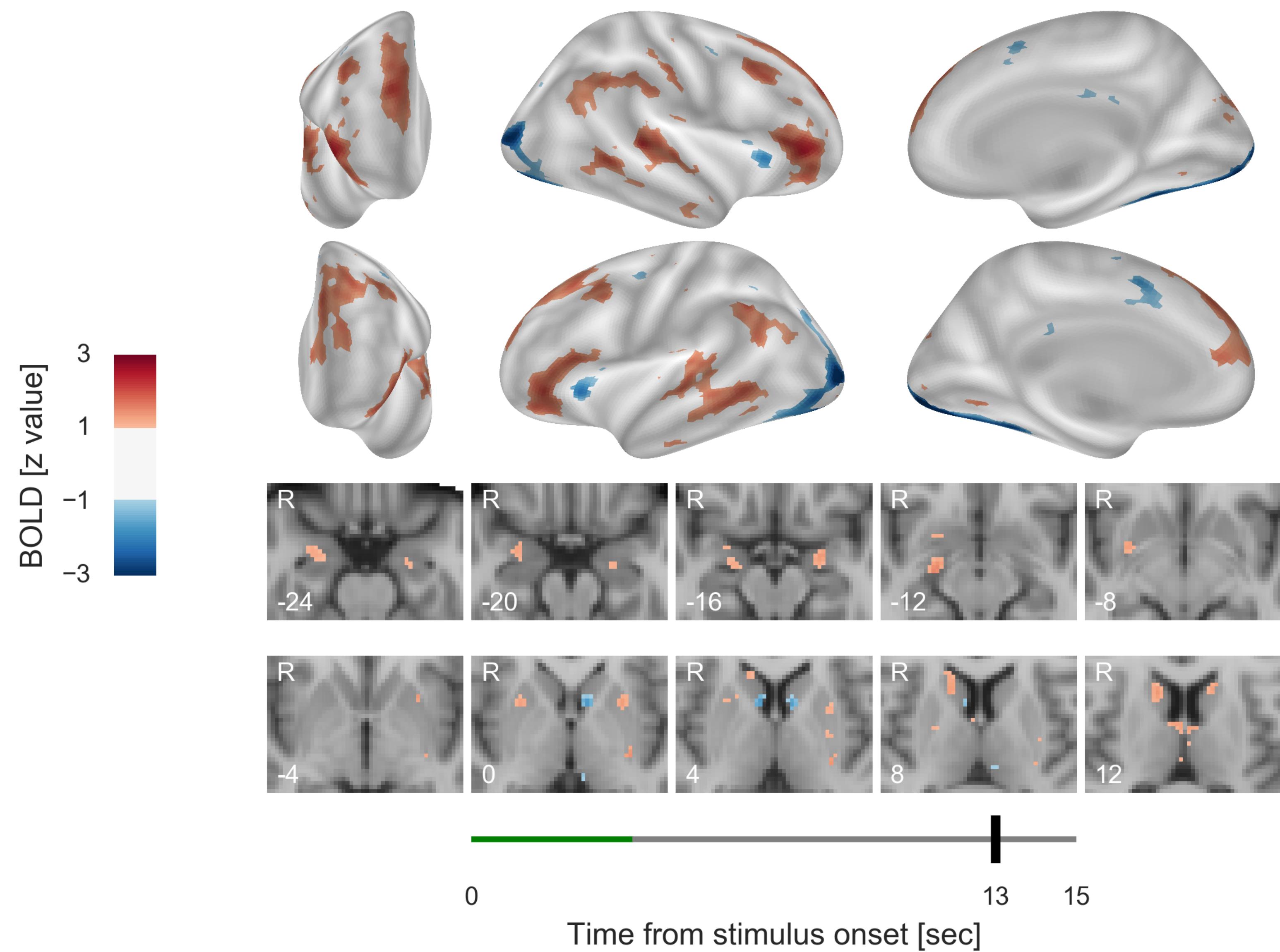


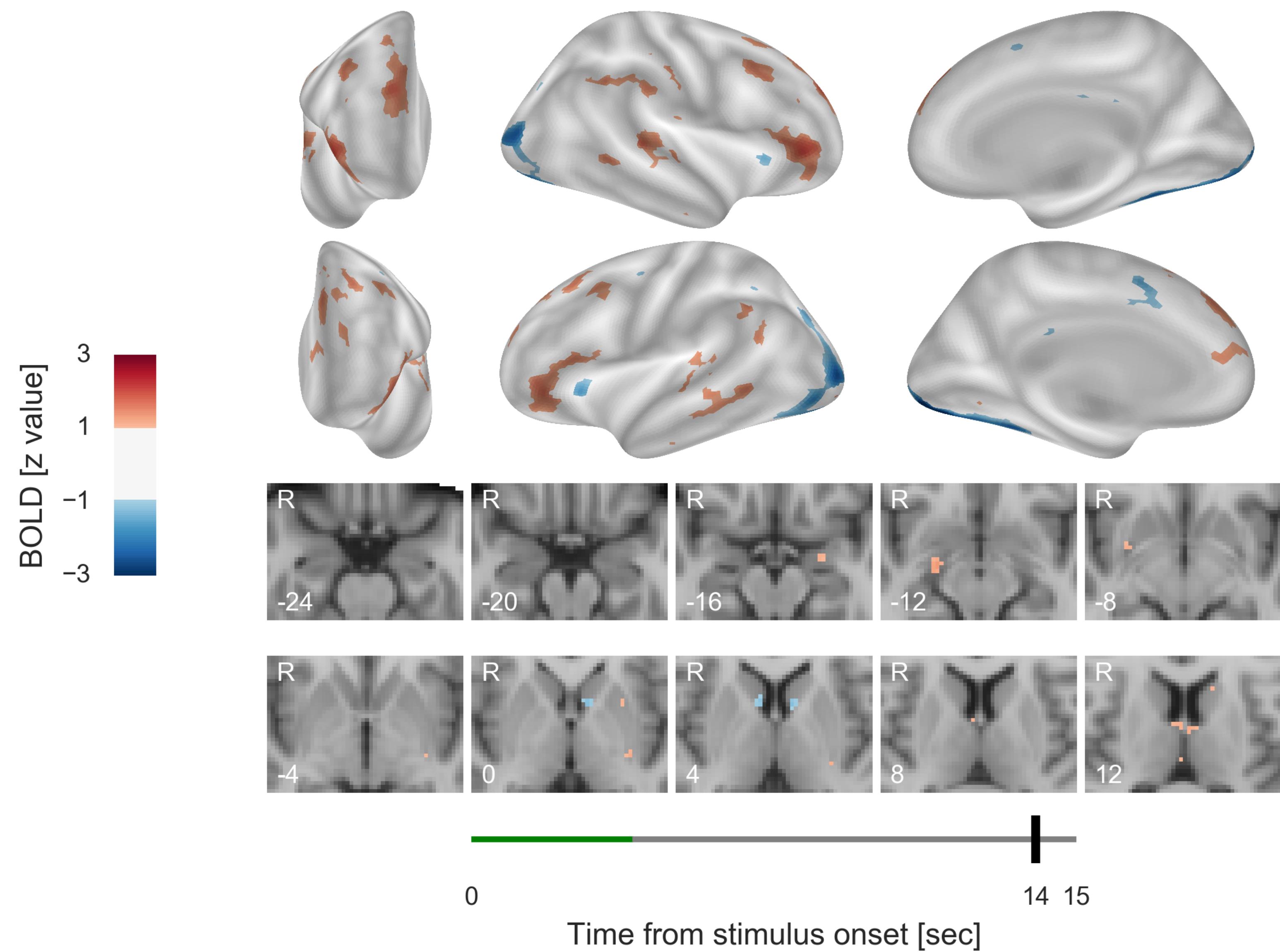


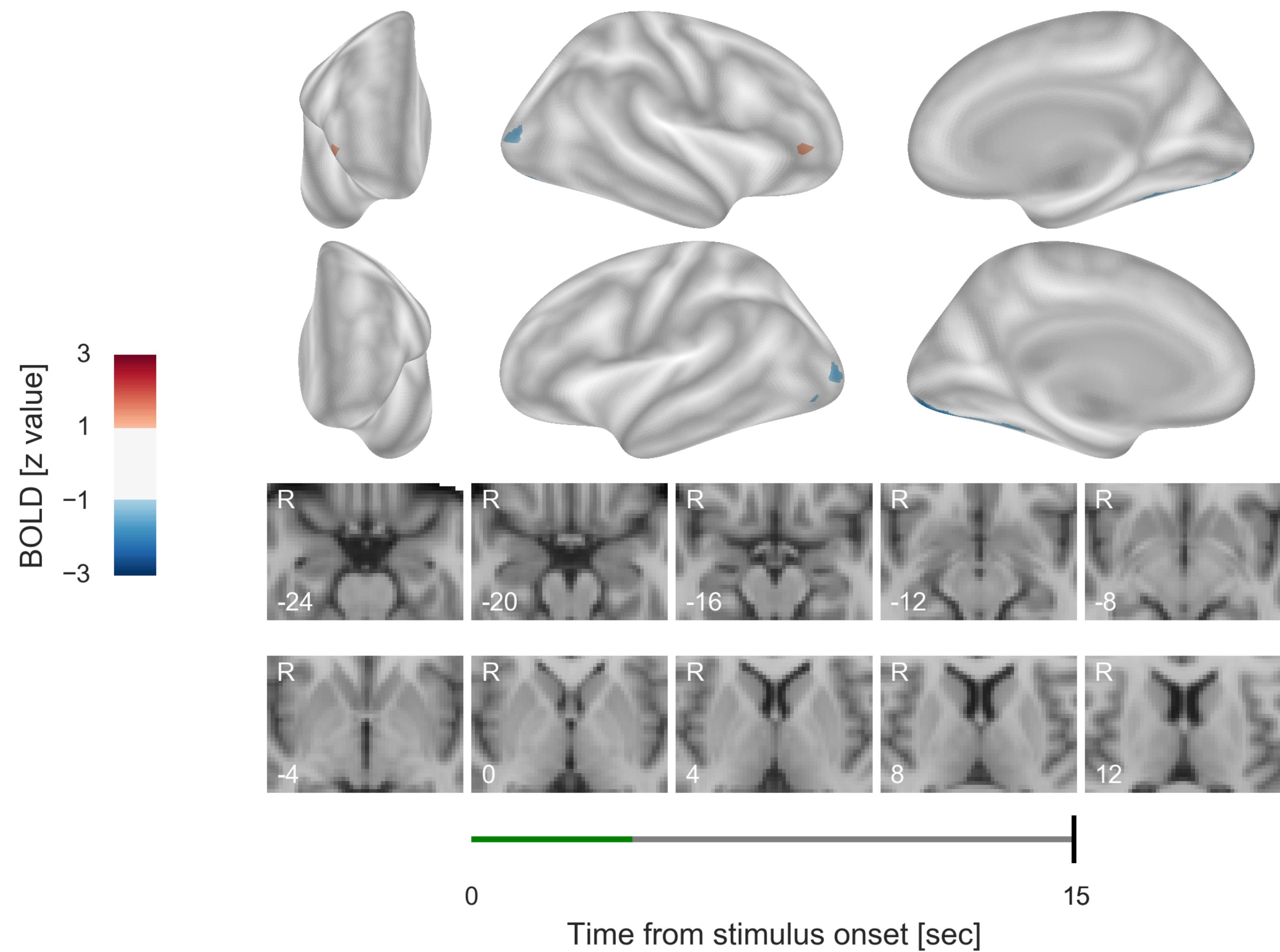


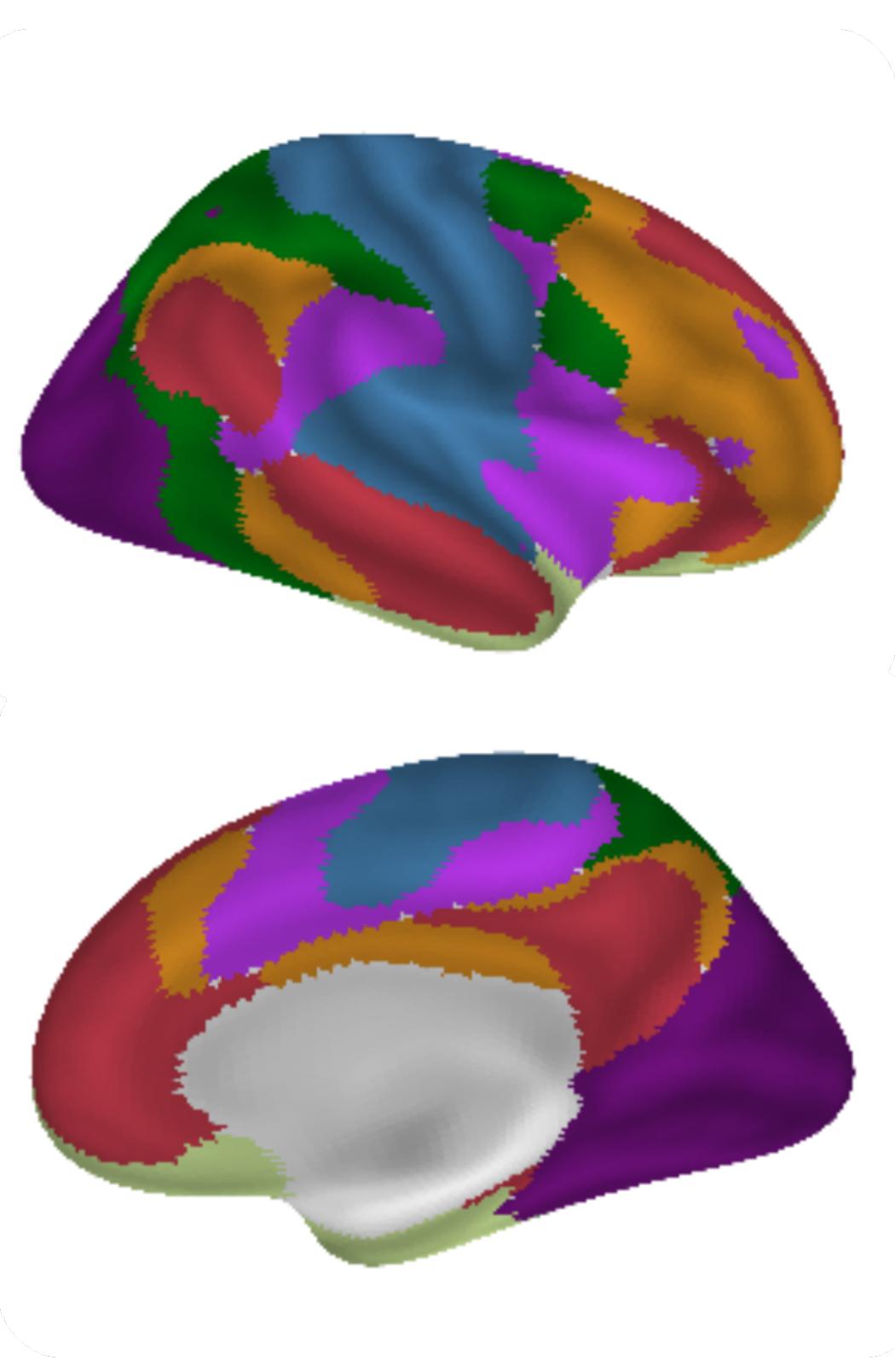








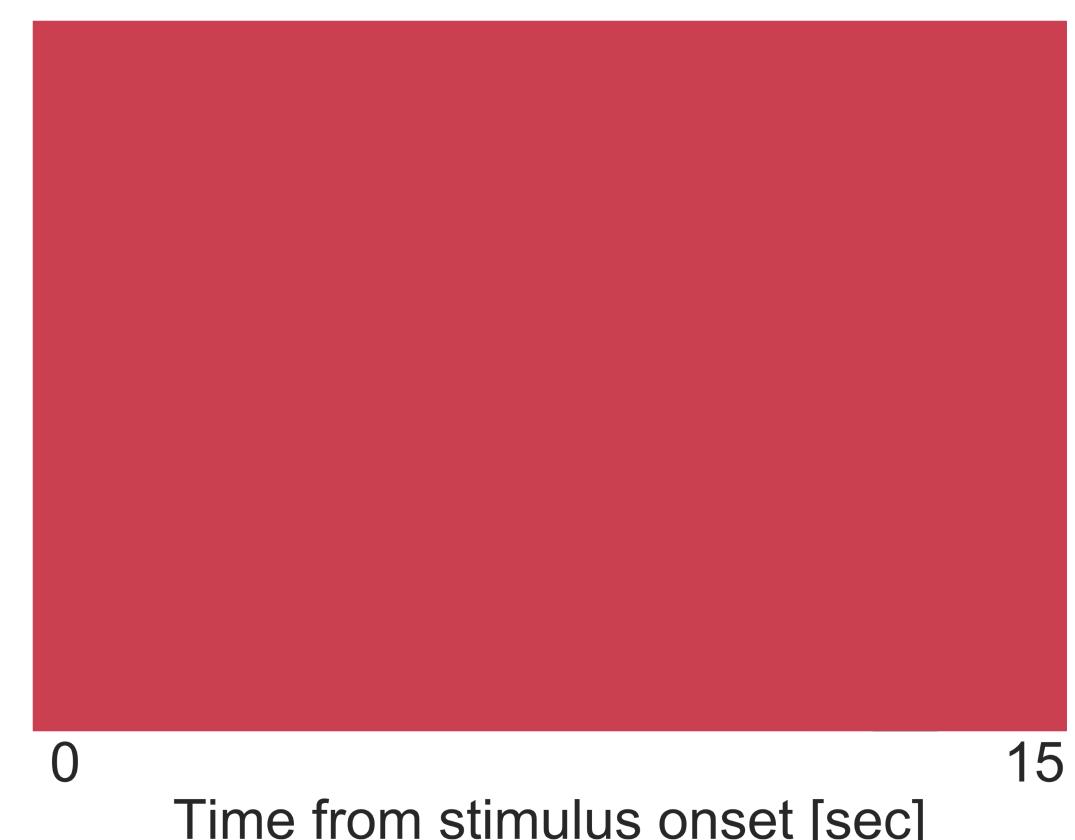
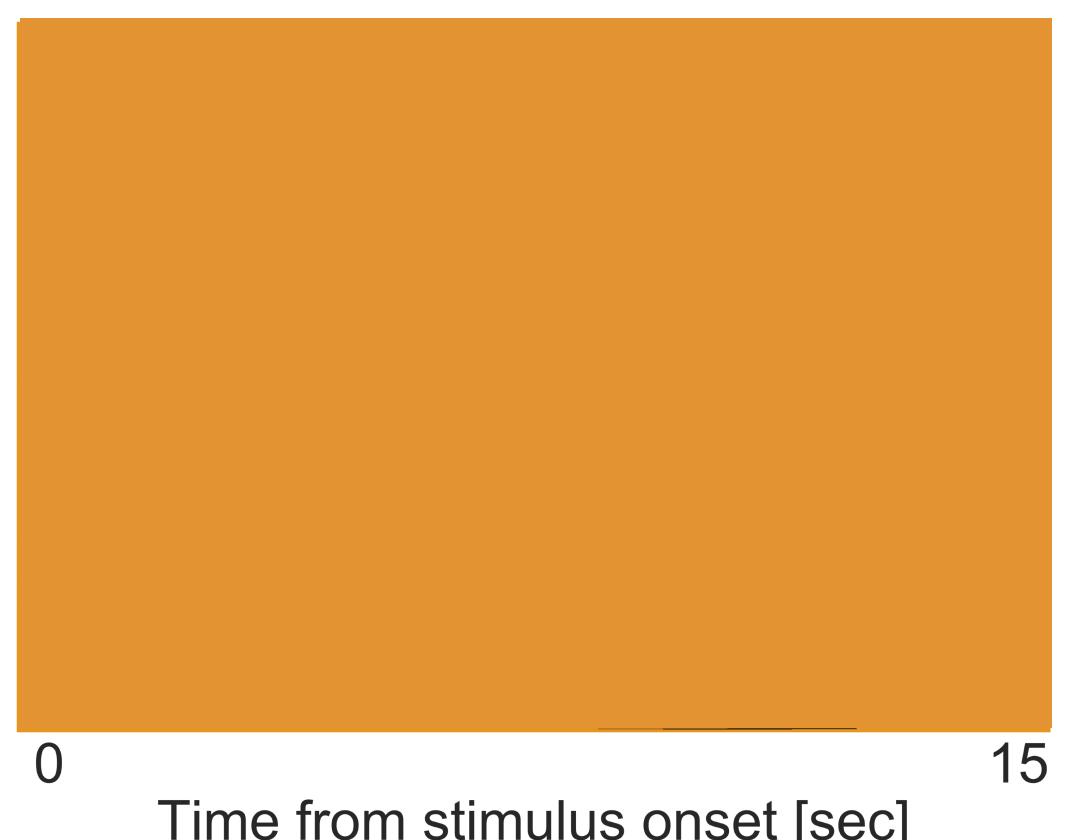
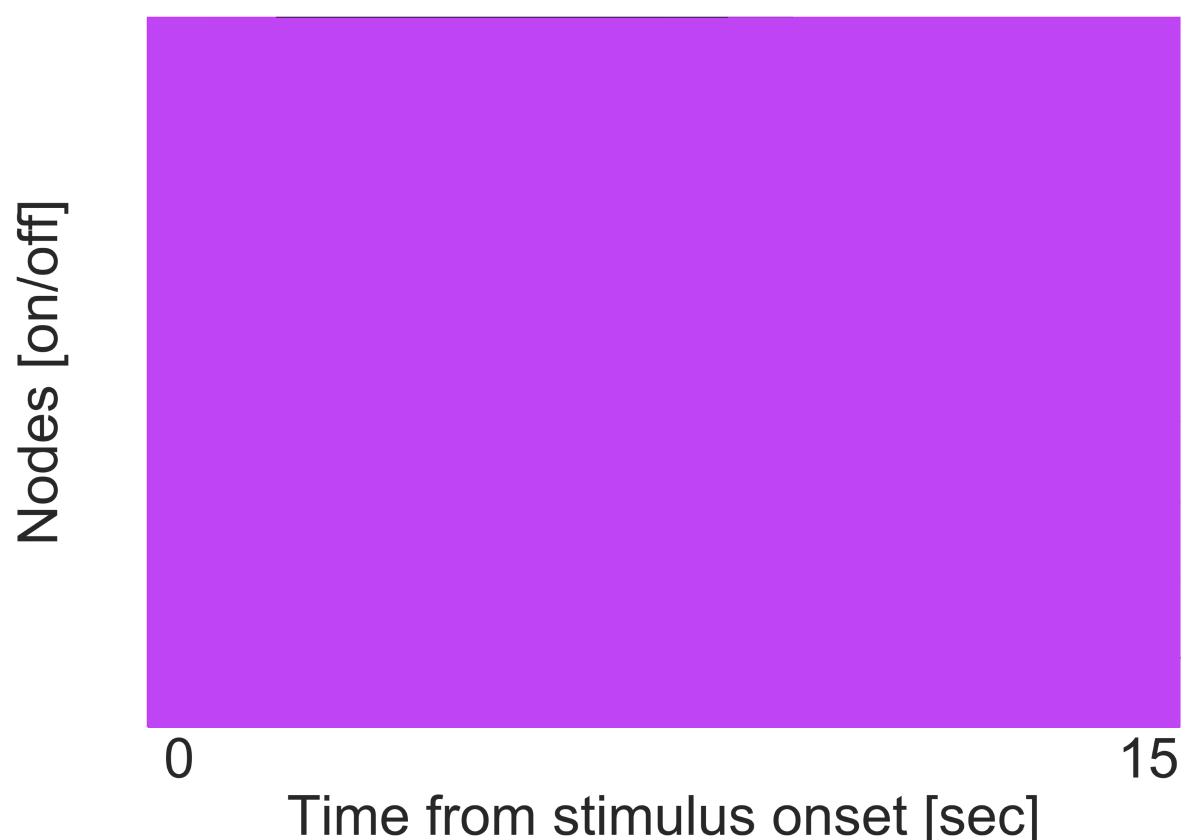




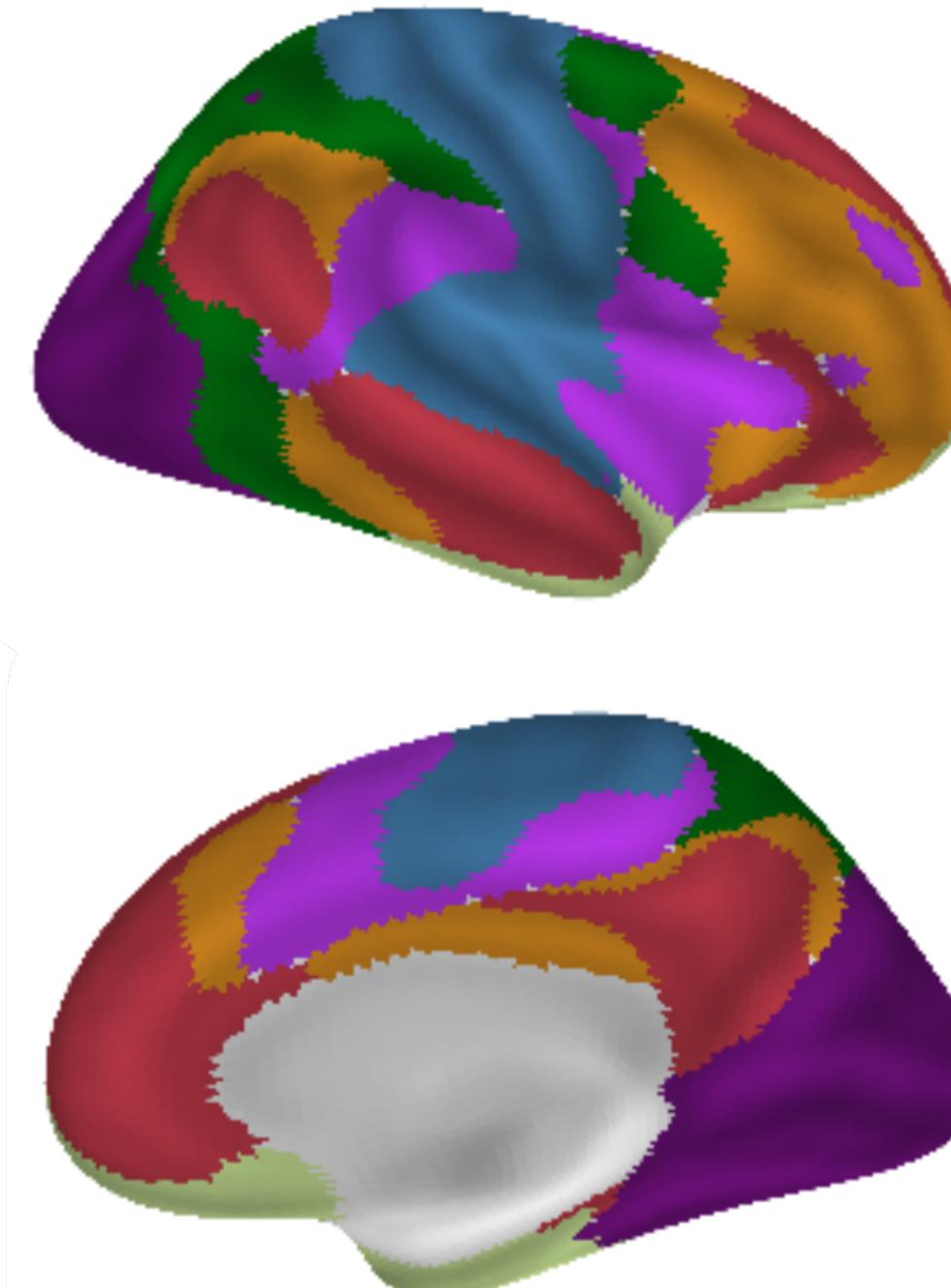
salience

fronto-parietal

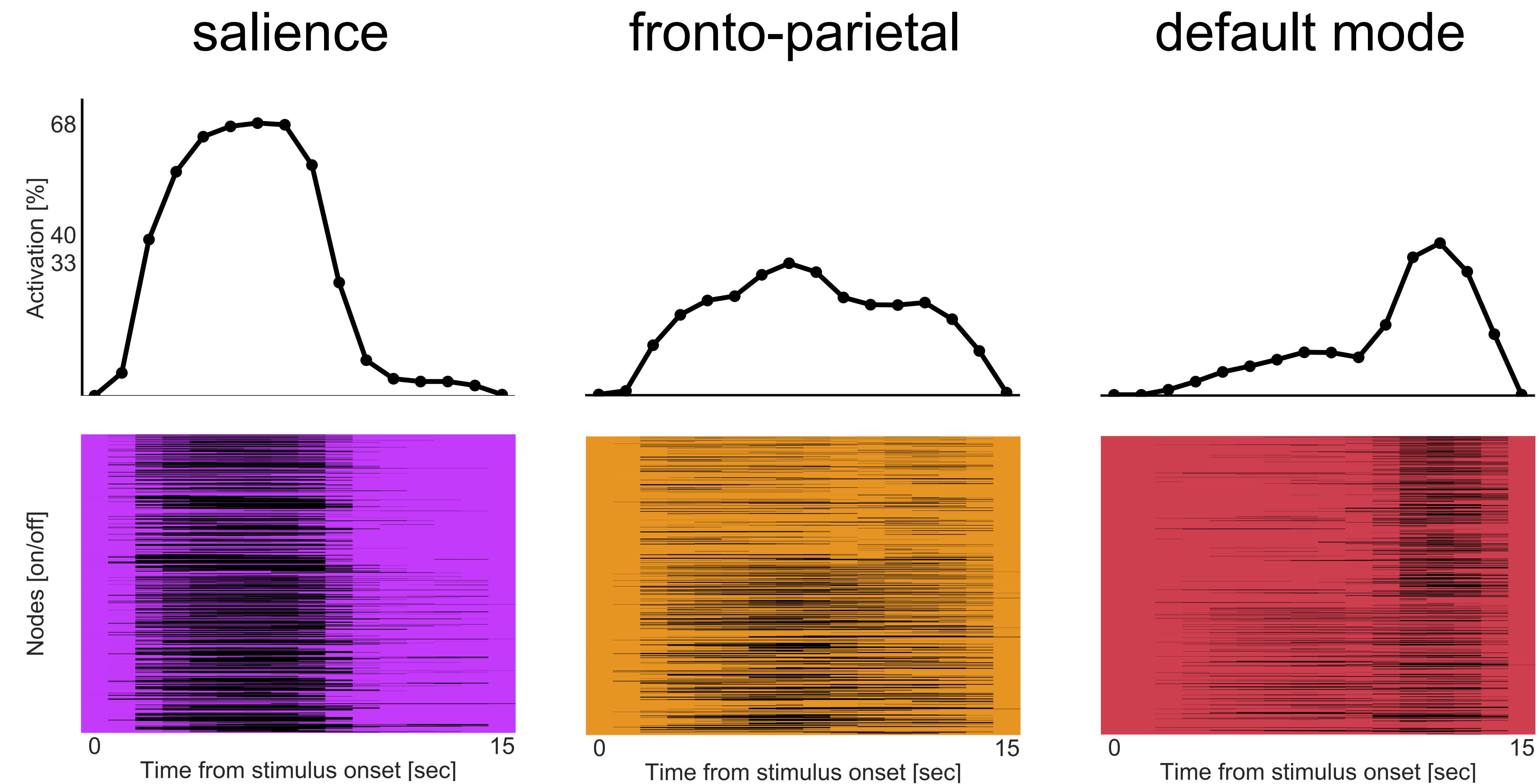
default mode



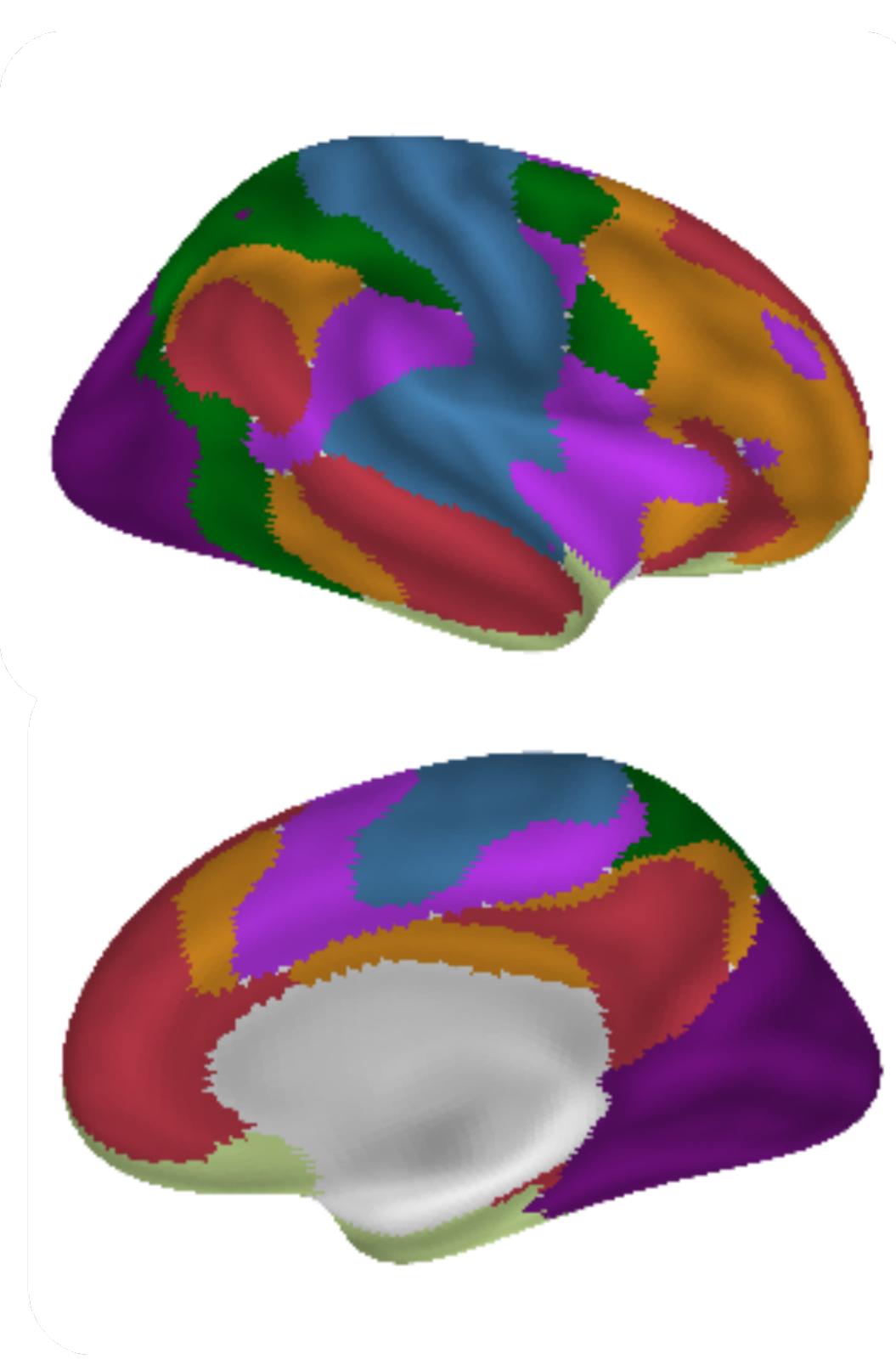
Threat-related cue (CS+)



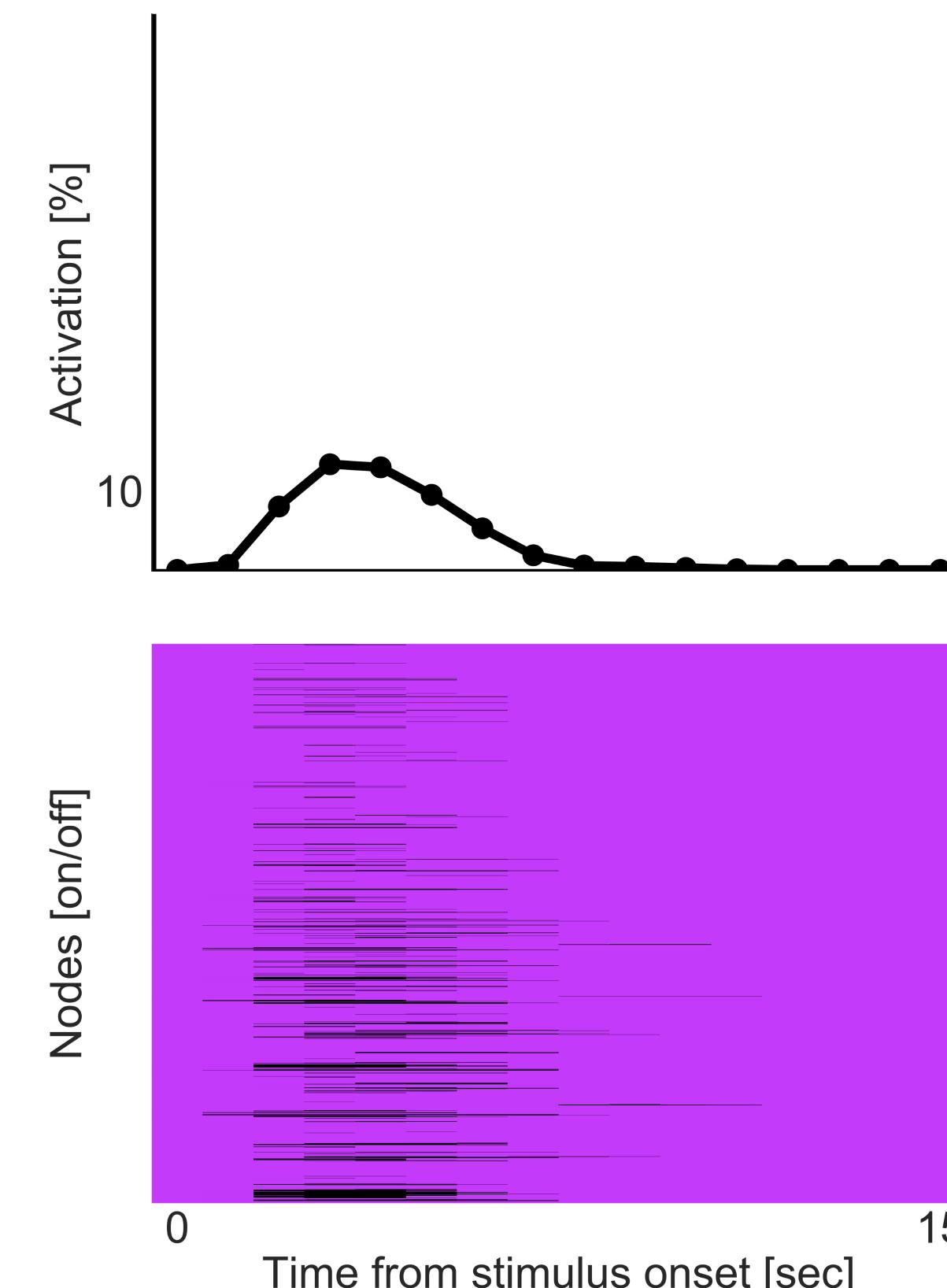
Yeo et al. (2011)
J Neurophysiol



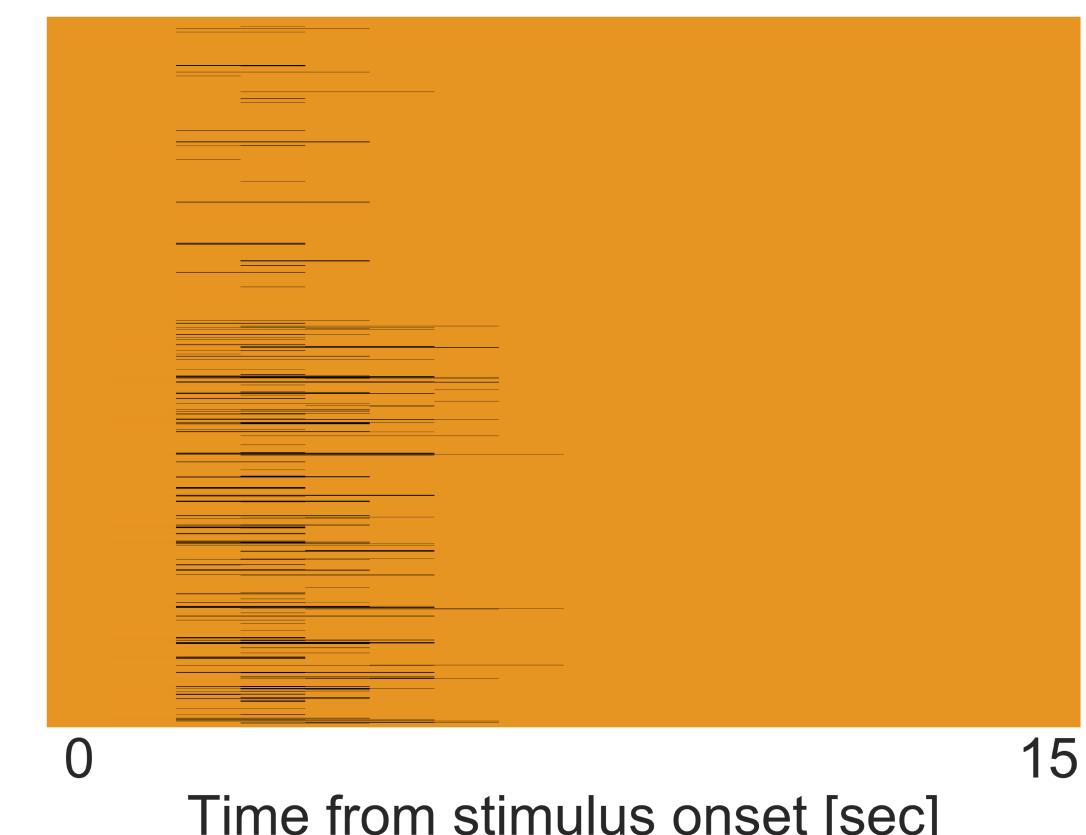
Neutral cue (CS-)



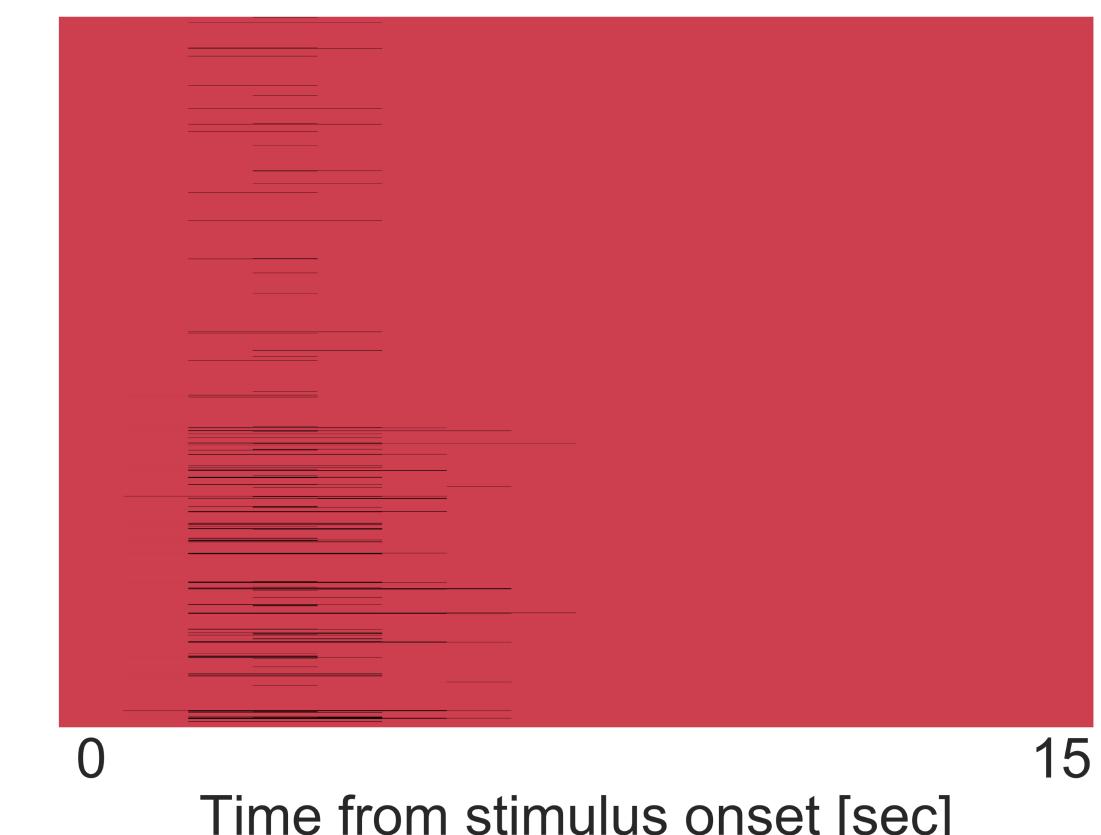
salience



fronto-parietal

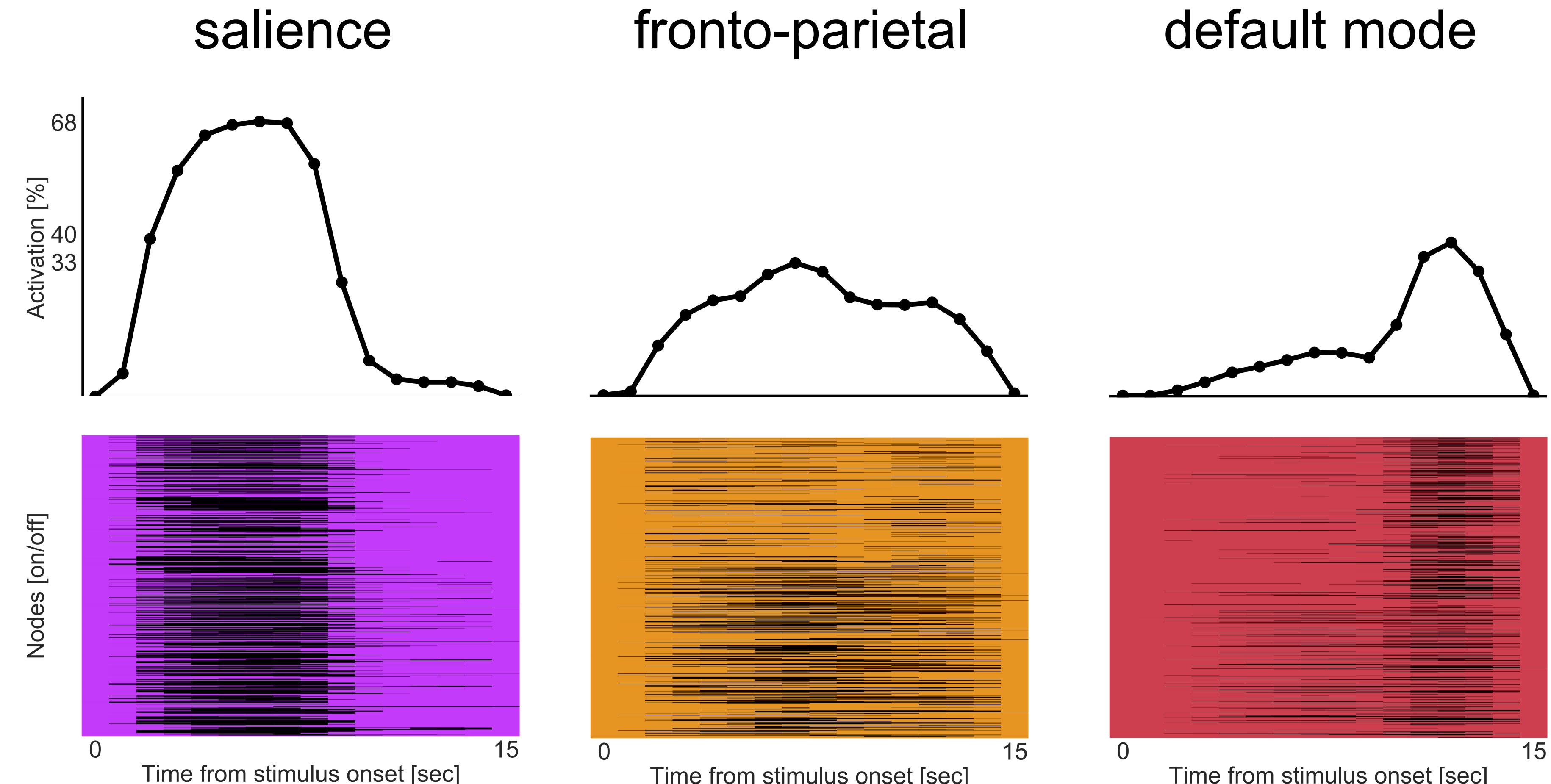
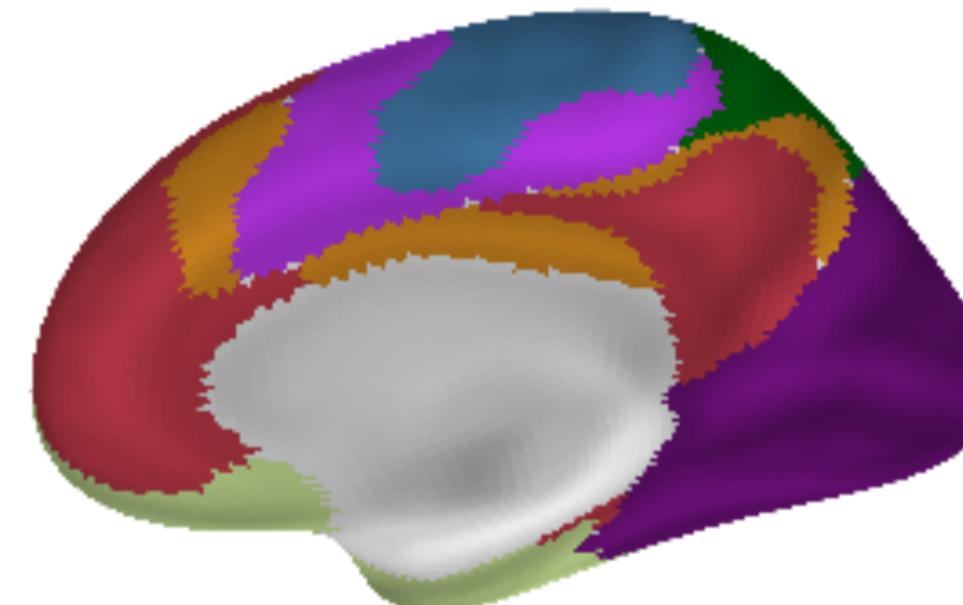
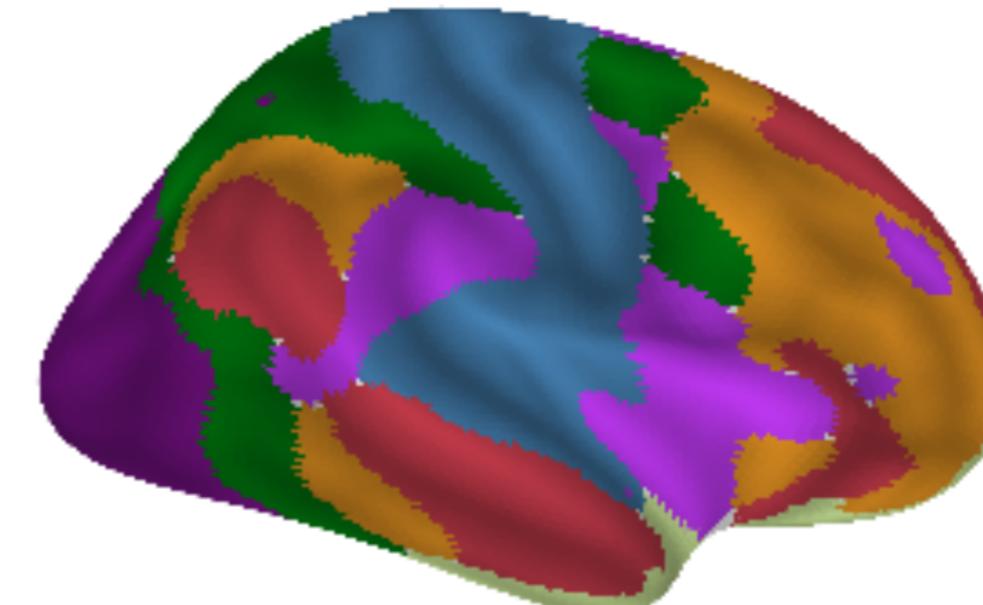


default mode



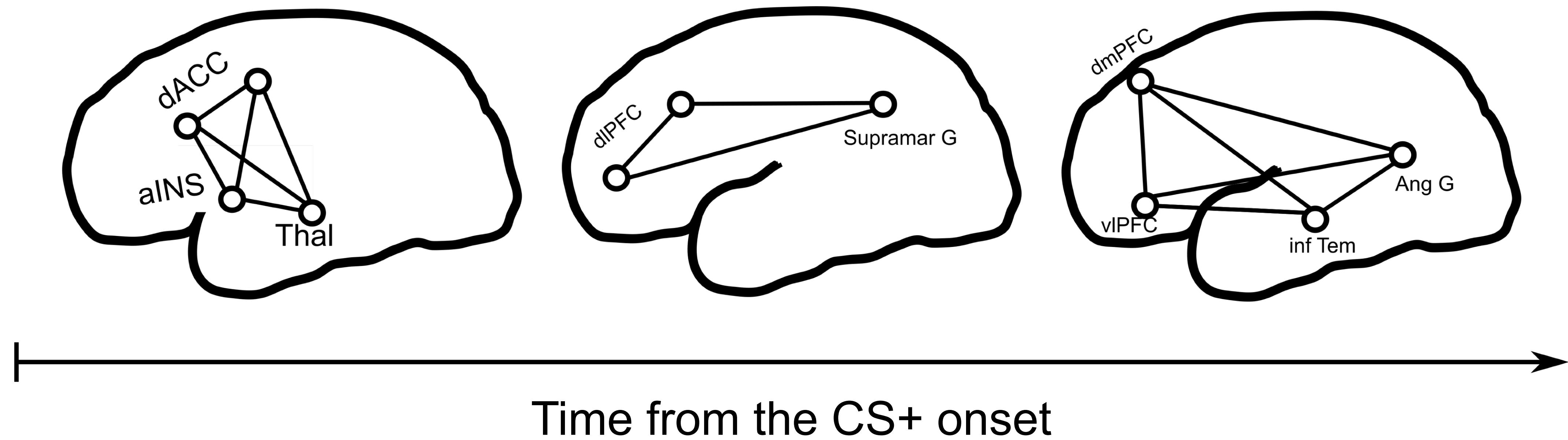
Yeo et al. (2011)
J Neurophysiol

Threat-related cue (CS+) triggered coordinated brain activity that unfolded from salience to default mode regions



Yeo et al. (2011)
J Neurophysiol

Continual elaboration of threat-related information beyond low-level automatic associations?



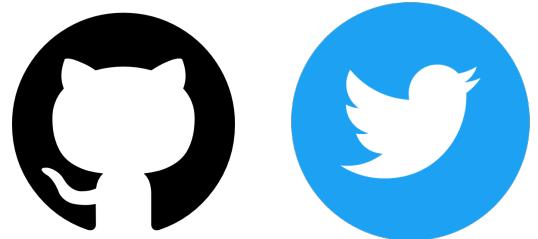
Acknowledgements

Sabine Oligschlaeger
Ilya M. Veer
Susanne Erk
Henrik Walter
Arno Villringer
Michael Gaebler
Daniel S. Margulies
&
Neuroanatomy & Connectivity Group



I am looking for collaboration and projects!
Would you like to get in touch?

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@BmBaczkowski

