SOCIETÀ ITALIANA di PSICOLOGIA POSITIVA

Studio in cross-over per la verifica del dispositivo medico HE-PAT© e la stimolazione PinC© in soggetti normali sulle tracce EEG analizzate con metodica LORETA

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Disegno e obiettivi dello studio:

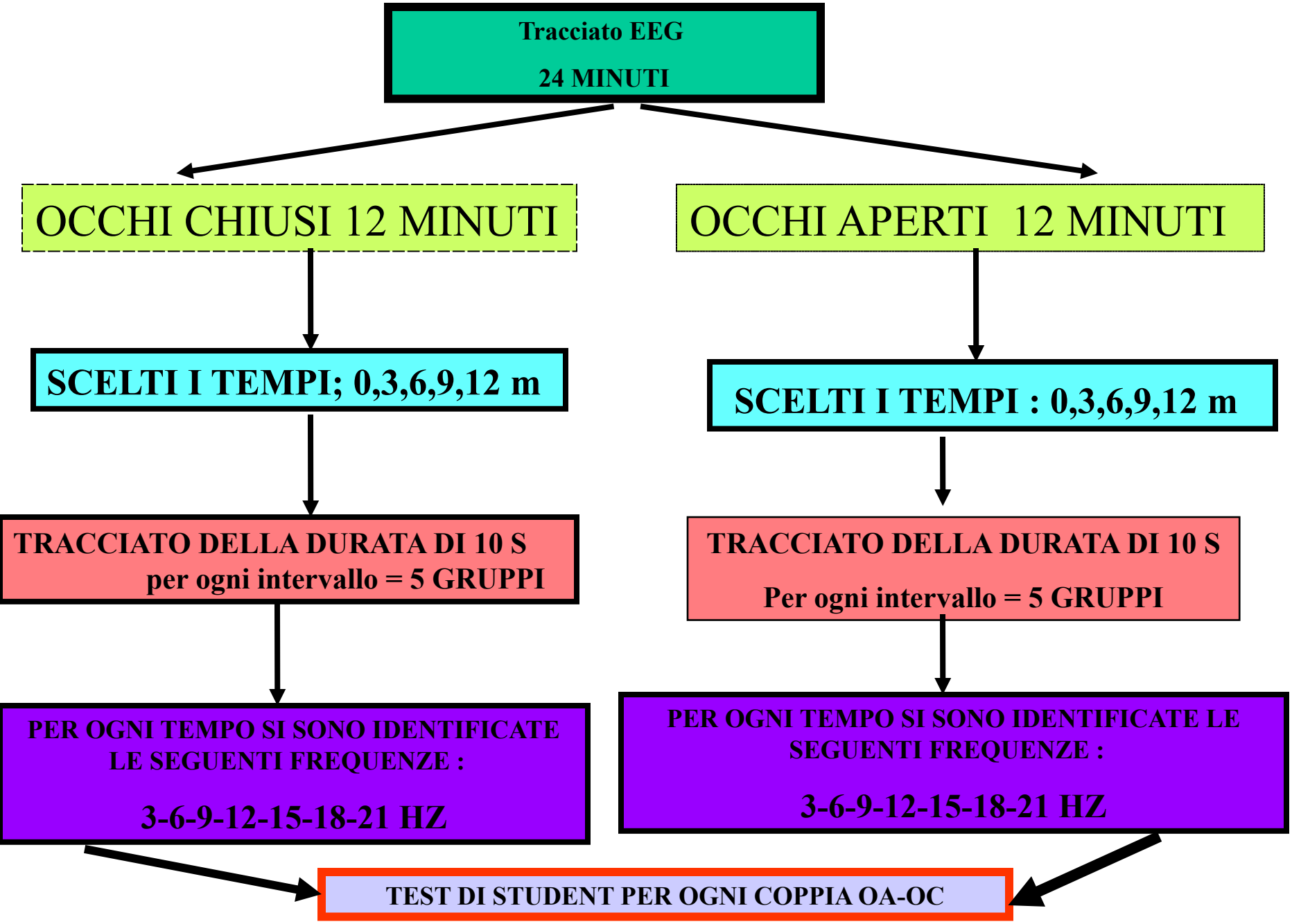
1. Sono stati scelti 10 soggetti normali di entrambi i sessi di età compresa tra 18 e 65 anni che in modo spontaneo si sono offerti di sottoporsi alla stimolazione HEPAT© con registrazione contemporanea dell' EEG. Nessuno dei soggetti presentava in anamnesi patologie neurologiche e/o psichiatriche che potessero inficiare il valore dello studio

2. Registrazione EEG con cuffia precablata secondo il sistema 10-20 con filtro notch inserito, filtro passa basso 50Hz e passa alto 1.6 Hz, impedenza < 5 kOhm

3. Durata della registrazione 24 minuti cosi suddivisa:

12 minuti occhi aperti e 12 minuti ad occhi chiusi

4. Attraverso la stimolazione HEPAT© verificare quali sono le regioni cerebrali che si attivano utilizzando la metodica LORETA, che permette di calcolare le attività elettromagnetiche e di correlarle alla tracce della risonanza magnetica.


Tracciato EEG
24 MINUTI
OCCHI CHIUSI 12 MINUTI
OCCHI APERTI 12 MINUTI
SCELTI I TEMPI; 0,3,6,9,12 m
SCELTI I TEMPI : 0,3,6,9,12 m
TRACCIATO DELLA DURATA DI 10 S
per ogni intervallo = 5 GRUPPI
TRACCIATO DELLA DURATA DI 10 S
Per ogni intervallo = 5 GRUPPI
PER OGNI TEMPO SI SONO IDENTIFICATE LE SEGUENTI FREQUENZE :
3-6-9-12-15-18-21 HZ
PER OGNI TEMPO SI SONO IDENTIFICATE LE SEGUENTI FREQUENZE :
3-6-9-12-15-18-21 HZ
TEST DI STUDENT PER OGNI COPPIA OA-OC

Di ogni singola frequenza si è verificata la distribuzione e la sua significatività statistica. Infatti lo studio, oltre alle sedi di attivazione, vuole verificare il peso delle fasi fisiologiche di occhi aperti e occhi chiusi sulla distribuzione delle frequenze nelle diverse regioni cerebrali.

AL FINE DI RIDURRE IL NUMERO DELLE DIAPOSITIVE HO SCELTO I SEGUENTI GRUPPI GENERATI DAL CONFRONTO TRA I GRUPPI

OA (1-3-6-9-12M) E IL GRUPPO OC (14,16,18,20,22M) :

GRUPPO 1 = 3 MINUTI VS 14 M

GRUPPO 3 = 9 M VS 18M

GRUPPO 5 = 12 VS 22 M

PER OGNI GRUPPO SI SONO ANALIZZATE LE FREQUENZE:

3. 6. 9. 12. 15. 21 HZ

IPOTESI NULLA: I 2 GRUPPI SONO UGUALI

MODALITà DI PRESENTAZIONE DELLE BANDE DI FREQUENZA CON IL SOFTWARE LORETA

3 HZ

9HZ

15 HZ

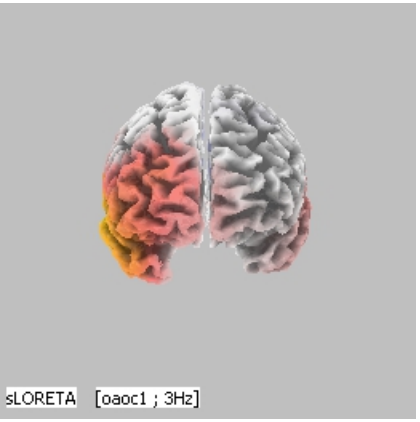
21 HZ

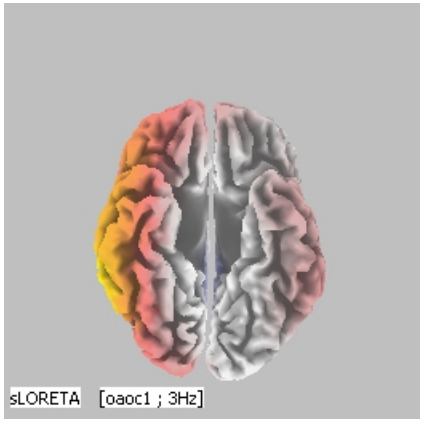
GRUPPO 1 OA OC

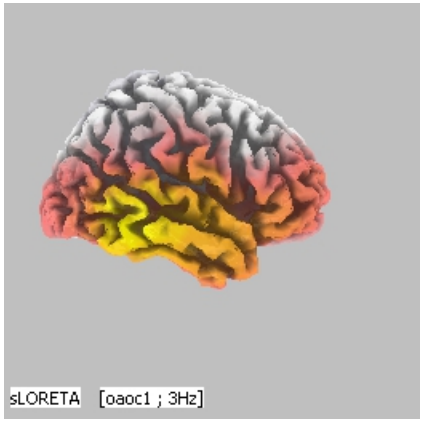
FREQUENZE 3 – 6 – 9 – 12 – 15 – 18 - 21 Hz

	t(0.01)	t(0.05)	t(0.10)
One-Tailed (A>B):	**2.692**	**2.270**	**2.086**
One-Tailed (A<B):	**-2.786**	**-2.268**	**-2.063**
Two-Tailed (A<>B):	**2.849**	**2.433**	**2.268**

GRUPPO 1 OA-OC 3 HZ







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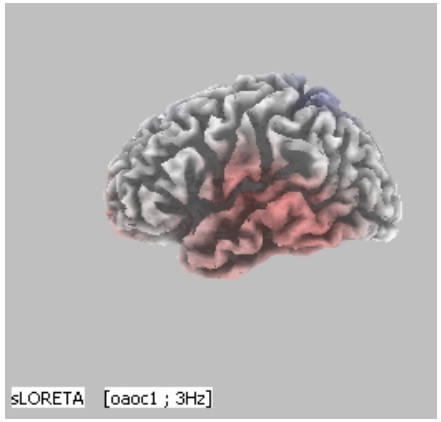

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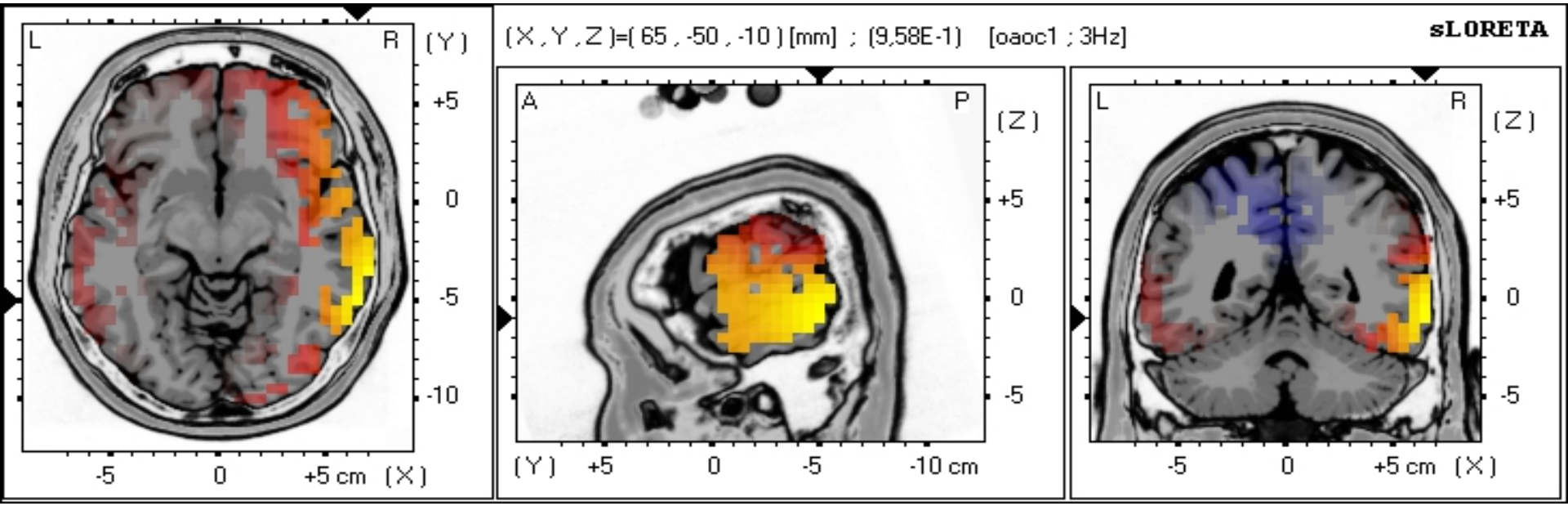
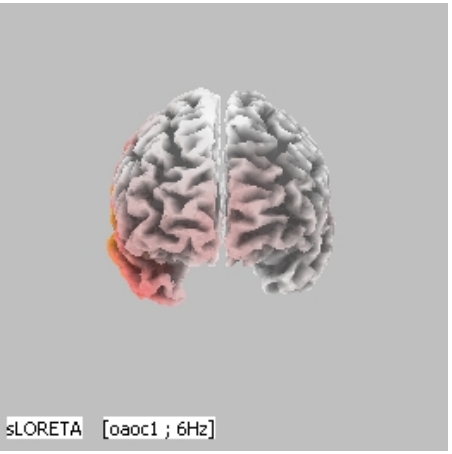
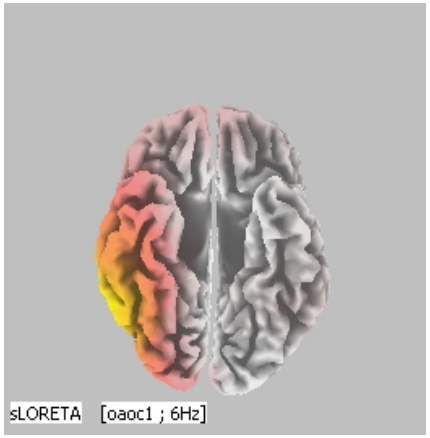


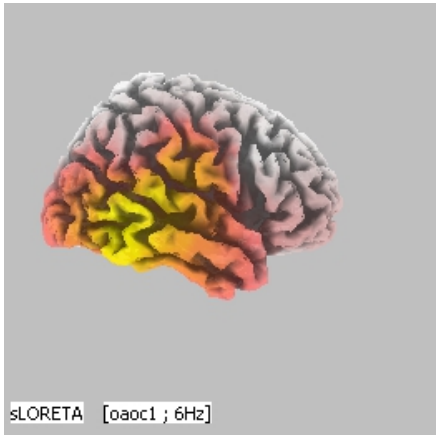
Best Match at 2 mm

Brodmann area 36 Parahippocampal Gyrus Limbic Lobe

GRUPPO 1 OA-OC 6 HZ







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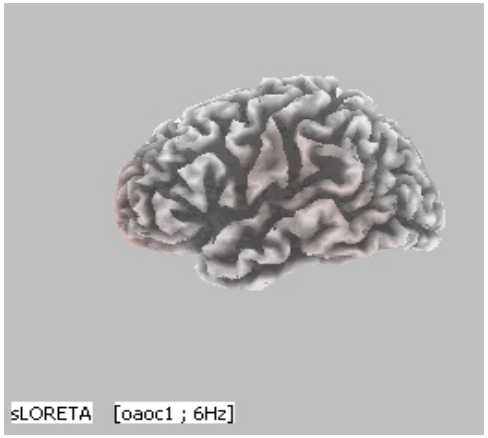

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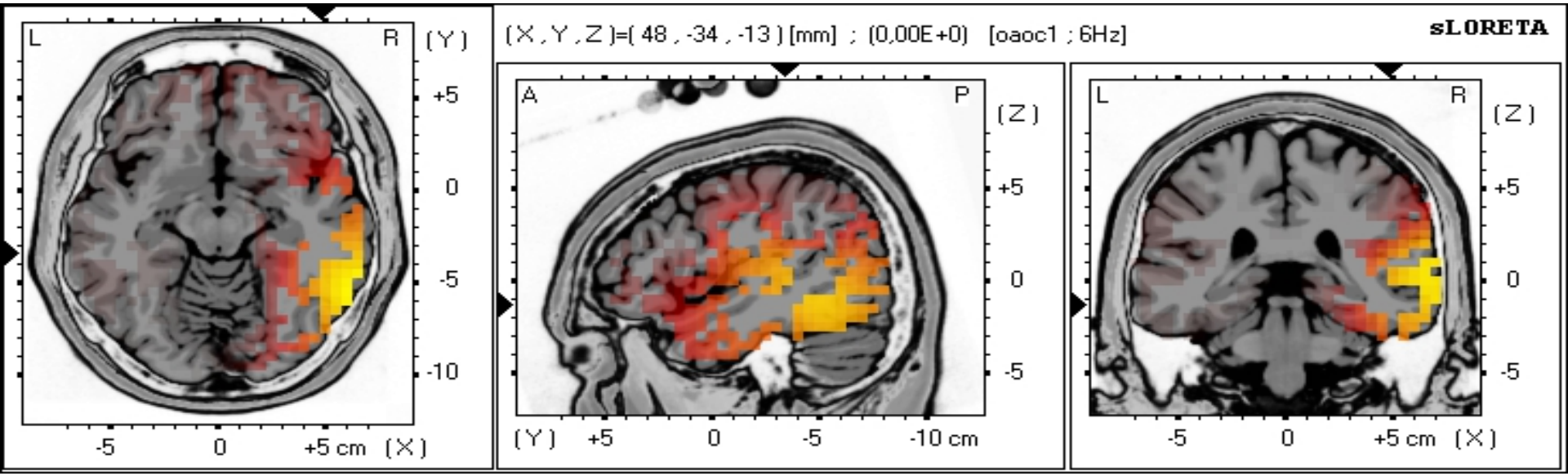
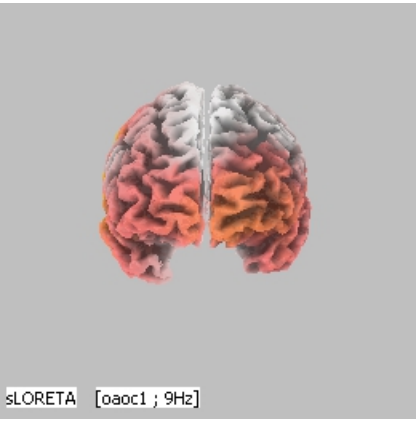
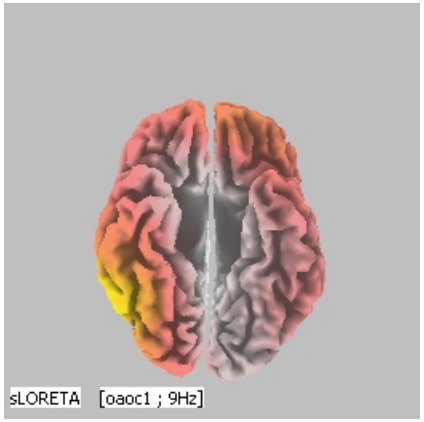
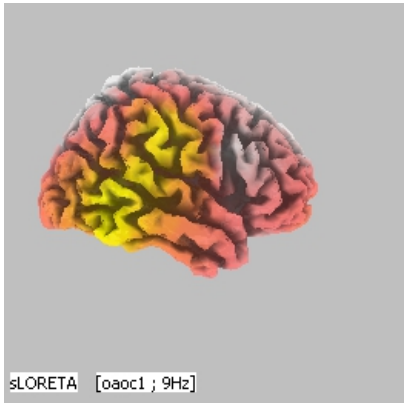


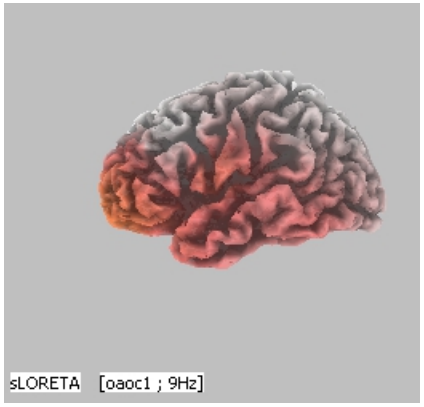
Best Match at 2 mm Brodmann area 36
Parahippocampal Gyrus Limbic Lobe

GRUPPO 1 OA-OC 9 HZ

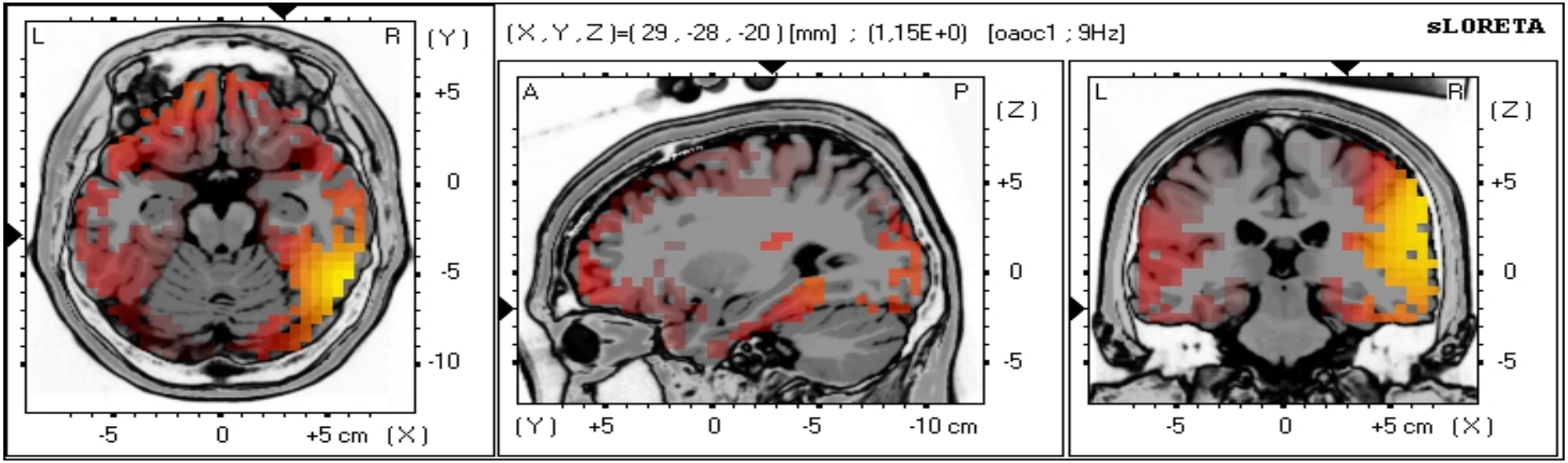








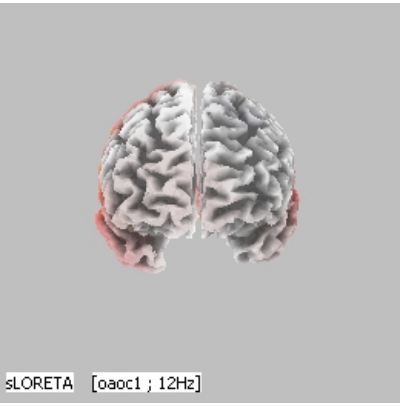
DX **SX**

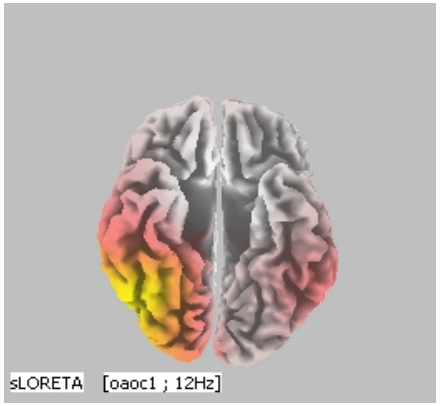


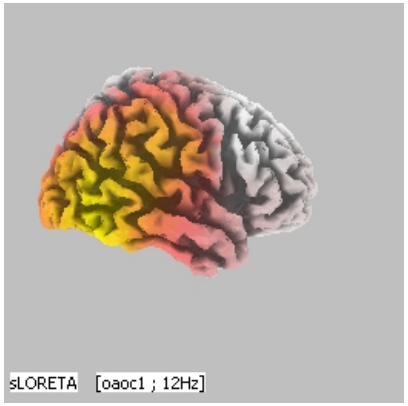
Best Match at 2 mm Brodmann area 36

Parahippocampal Gyrus Limbic Lobe

GRUPPO 1 OA-OC 12 HZ







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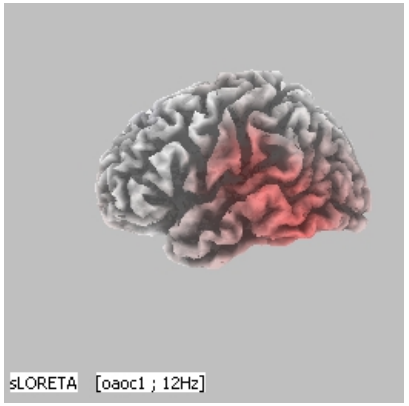

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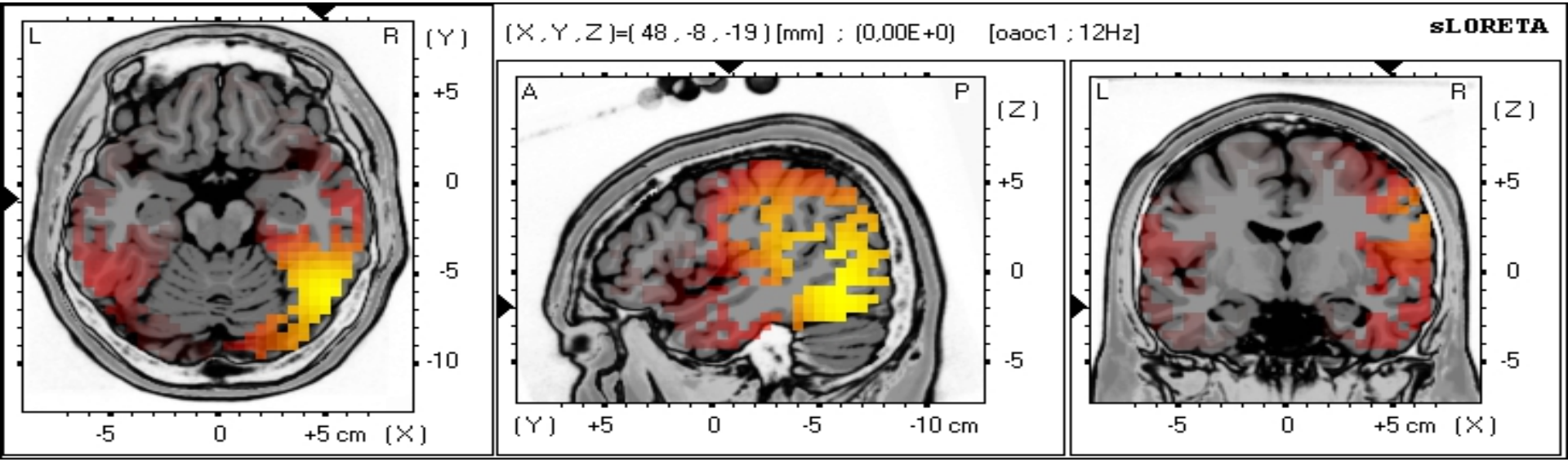
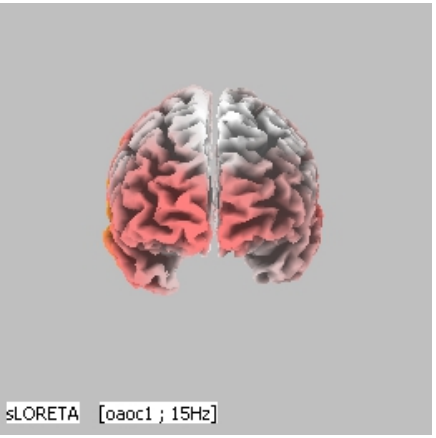
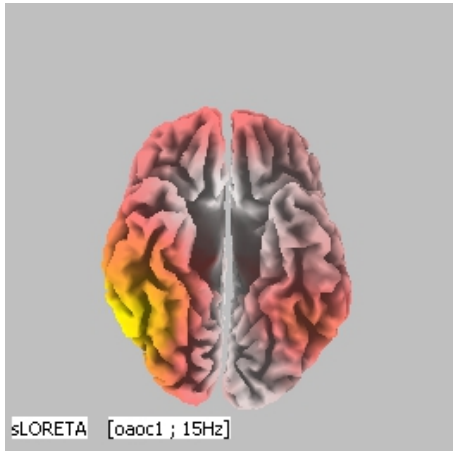


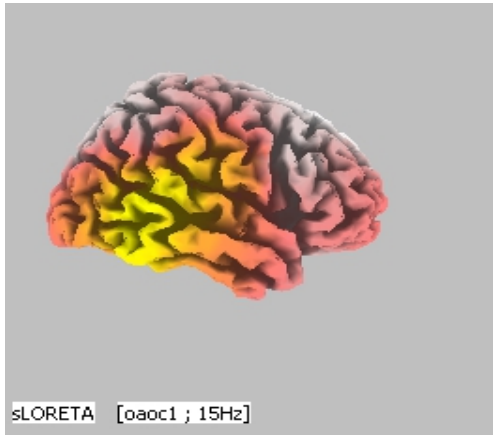
Best Match at 2 mm Brodmann area 36

Parahippocampal Gyrus Limbic Lobe

GRUPPO 1 OA-OC 15 HZ







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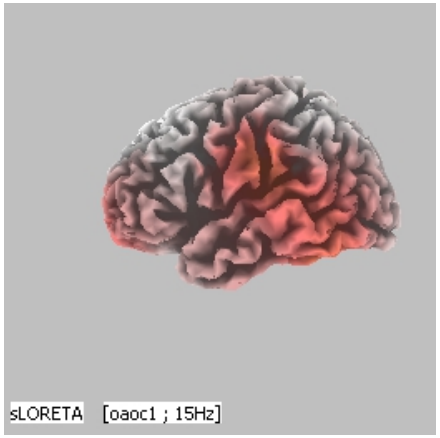

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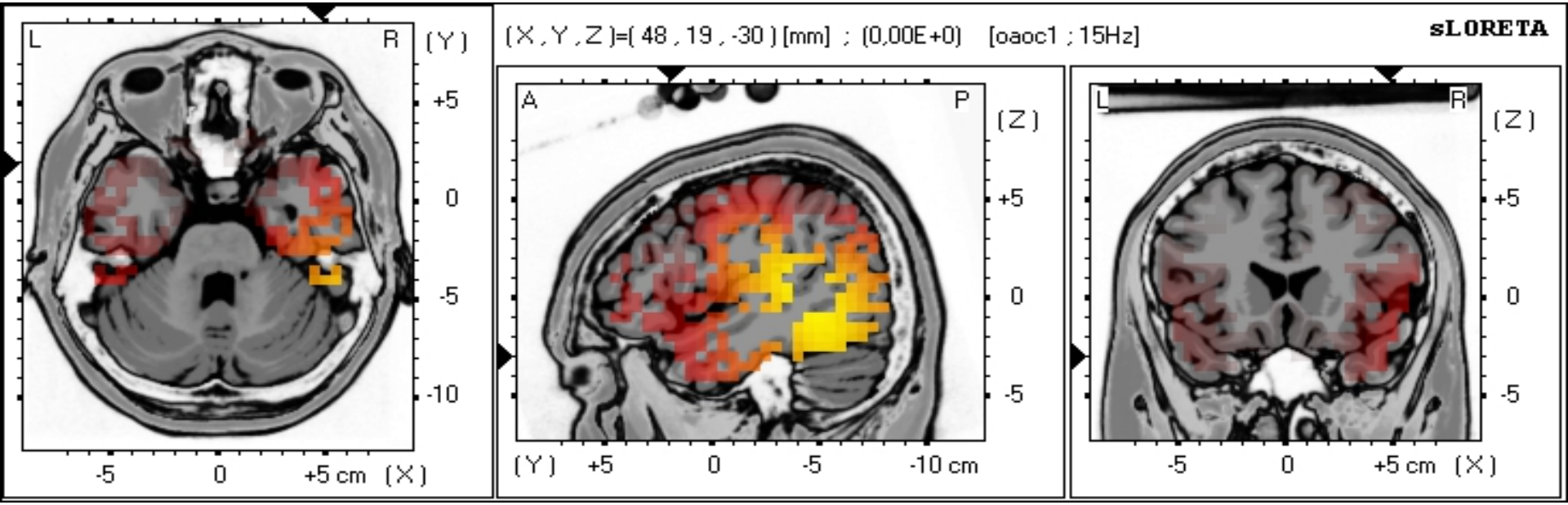
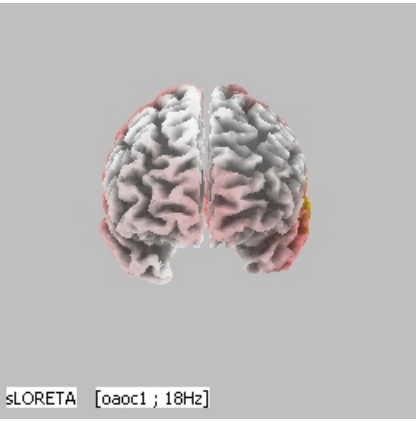
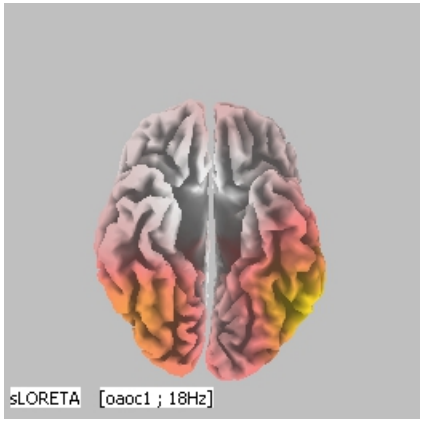


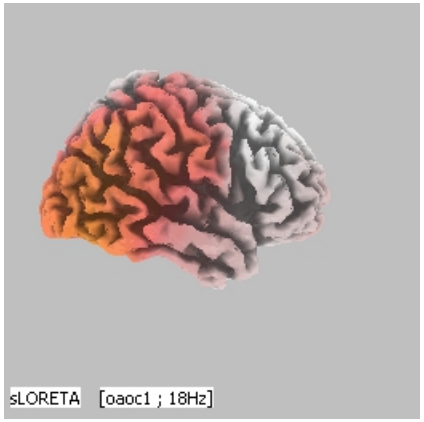
Best Match at 2 mm **Brodmann area 36**

Parahippocampal Gyrus **Limbic Lobe**

GRUPPO 1 OA-OC 18 HZ







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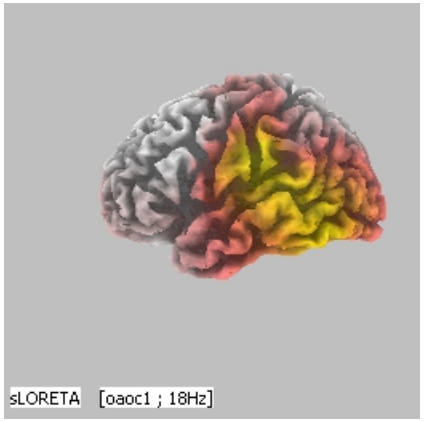

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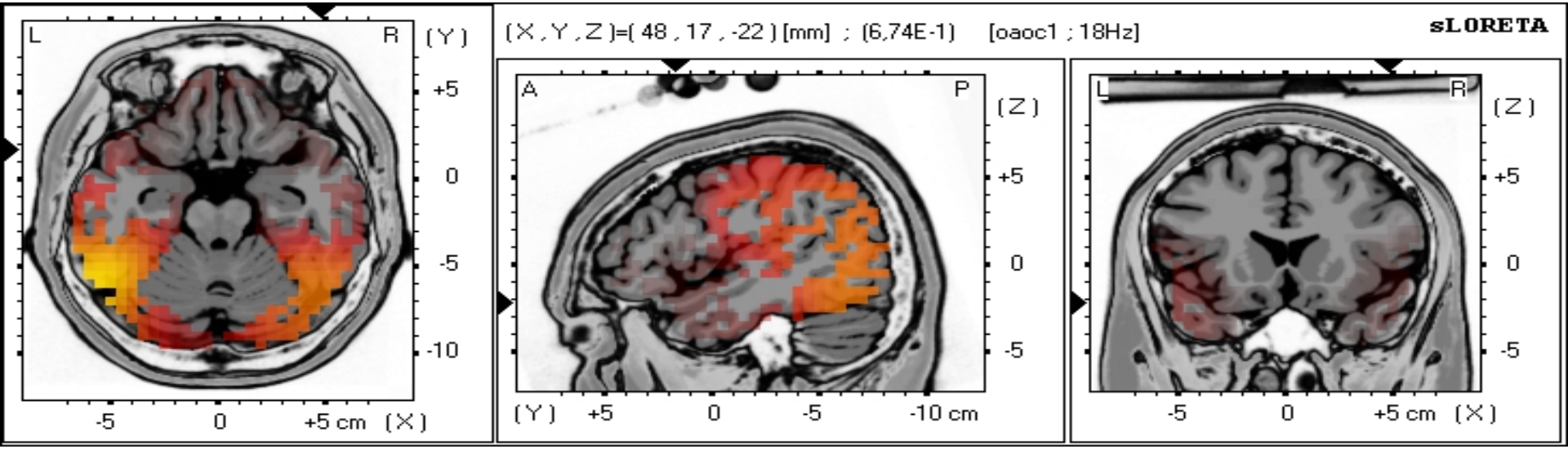
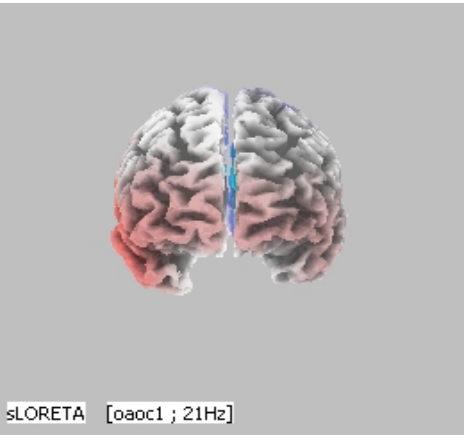
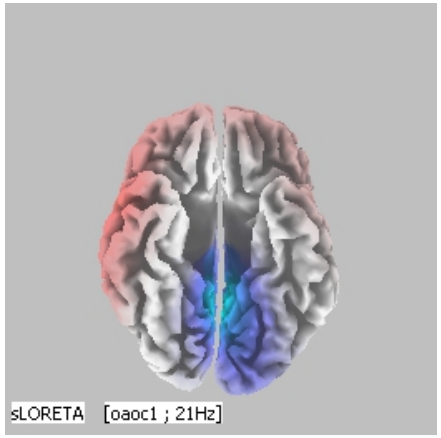


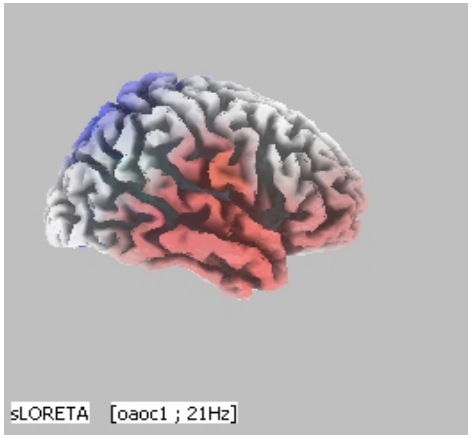
Best Match at 2 mm **Brodmann area 36**

Parahippocampal Gyrus **Limbic Lobe**

GRUPPO 1 OA-OC 21 HZ







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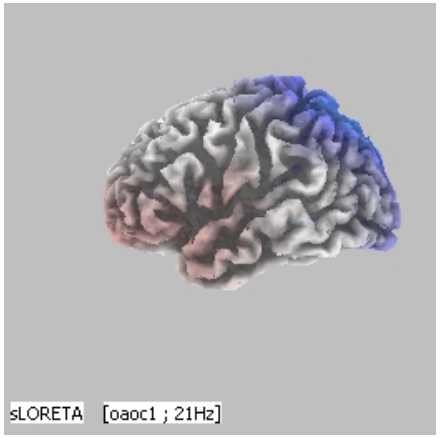

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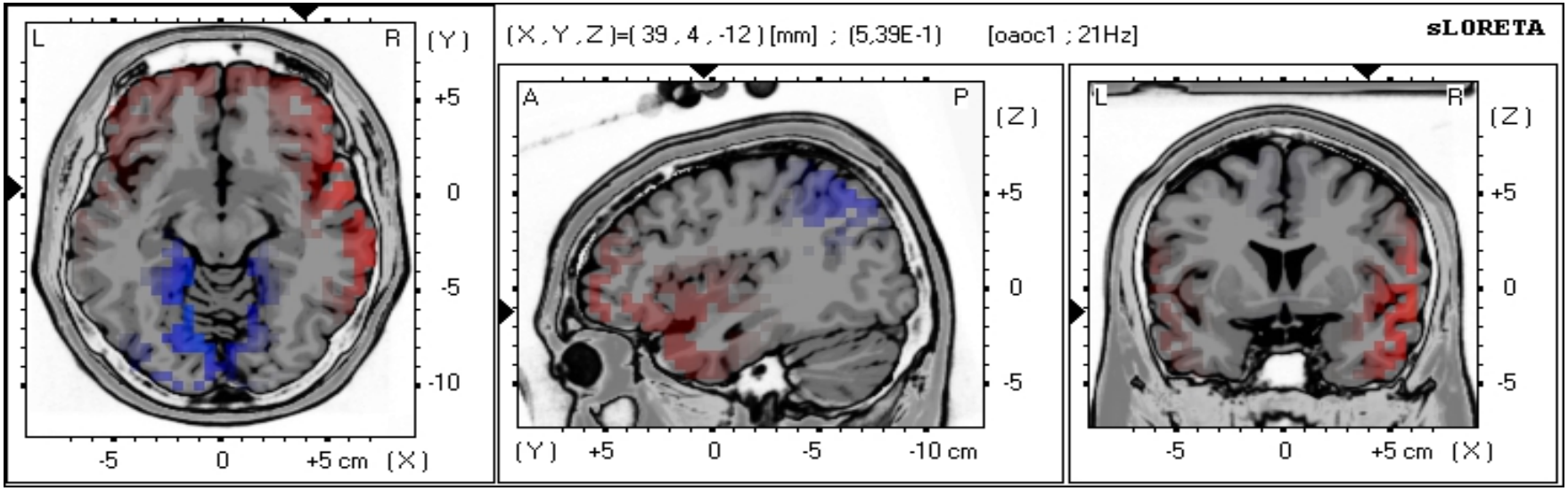


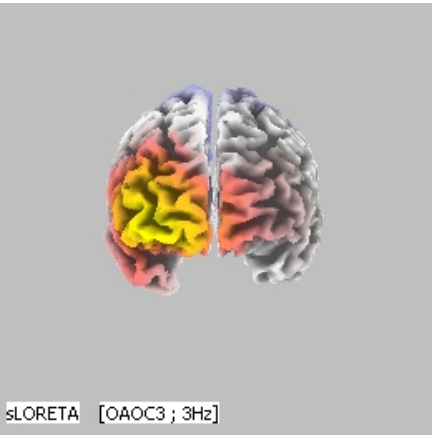
Best Match at 2 mm	**Brodmann area 36**
Parahippocampal Gyrus	**Limbic Lobe**

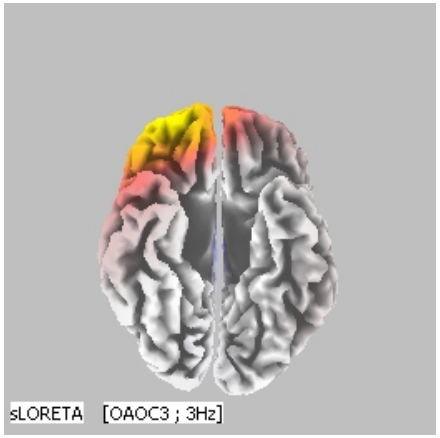
GRUPPO 3 OA OC

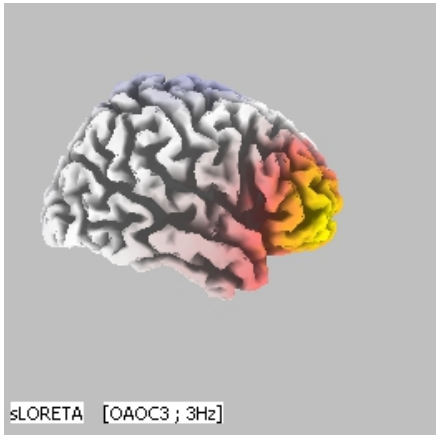
FREQUENZE 3 – 6 – 9 – 12 – 15 – 18 - 21 Hz

	t(0.01)	t(0.05)	t(0.10)
One-Tailed (A>B):	3.007	2.662	2.494
One-Tailed (A<B):	-2.999	-2.621	-2.482
Two-Tailed (A<>B):	3.070	2.853	2.638

GRUPPO 3 OA-OC 3 HZ







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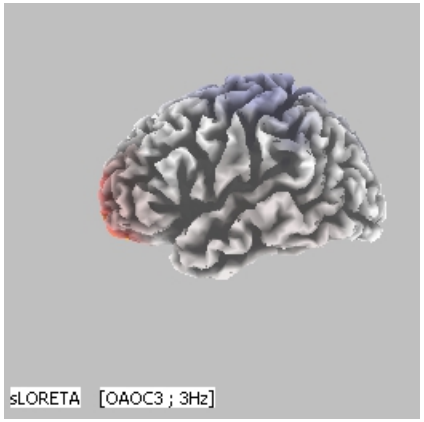

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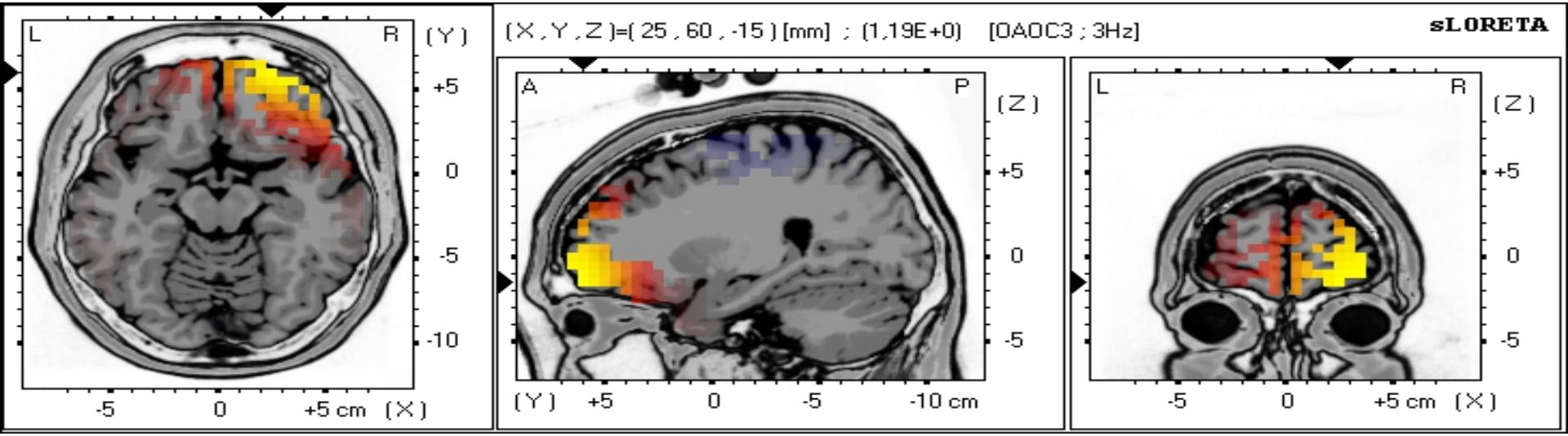
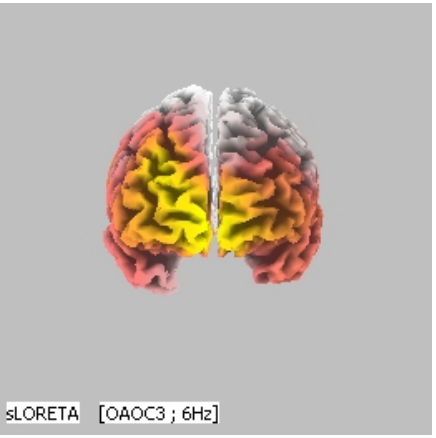
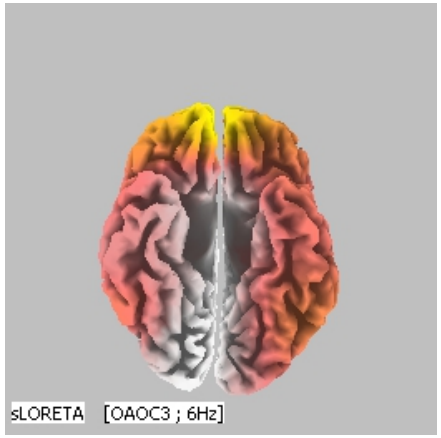


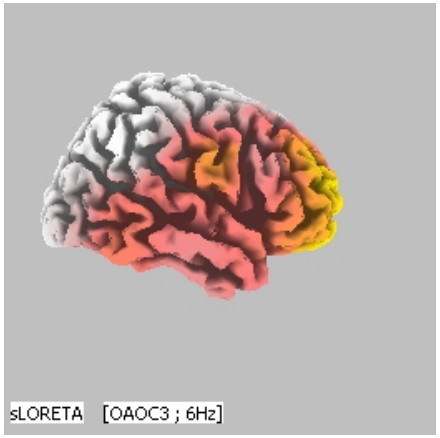
Best Match at 0 mm **Brodmann area 11**

Superior Frontal Gyrus **Frontal Lobe**

GRUPPO 2 OA-OC 6 HZ







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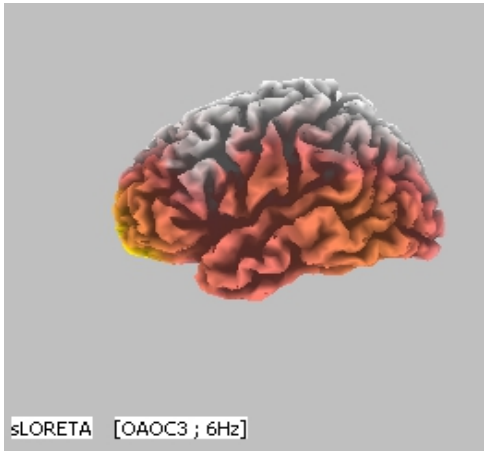

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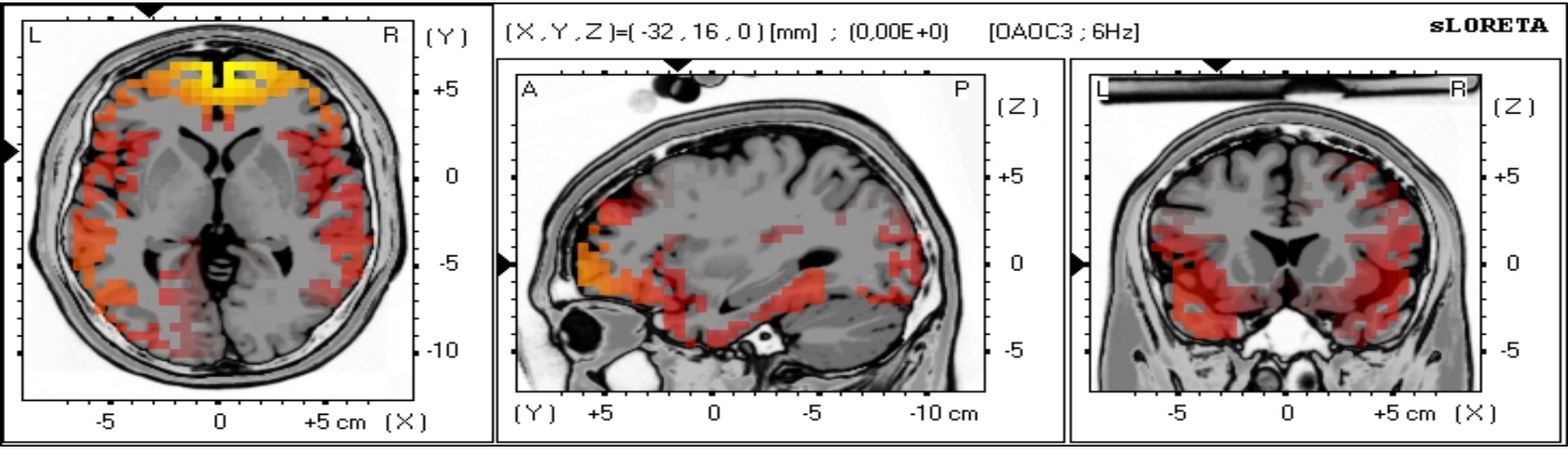
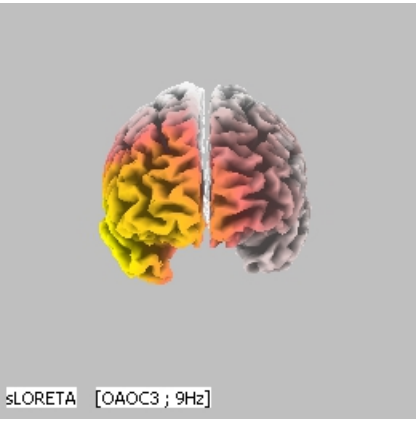
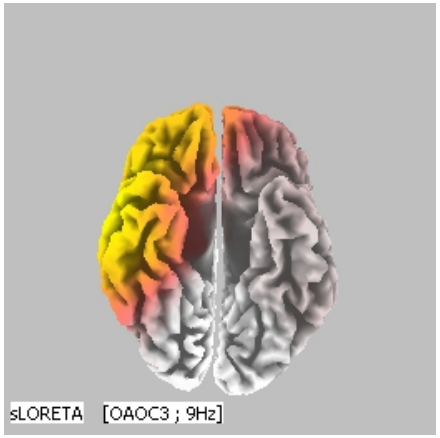


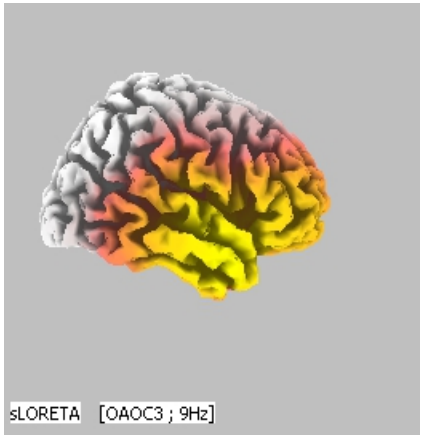
Best Match at 3 mm Brodmann area 13

Insula Sub-lobar

GRUPPO 3 OA-OC 9 HZ







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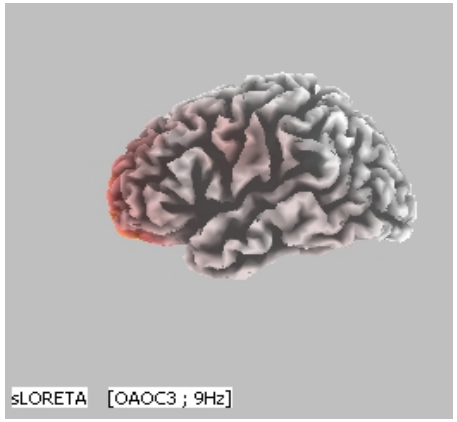
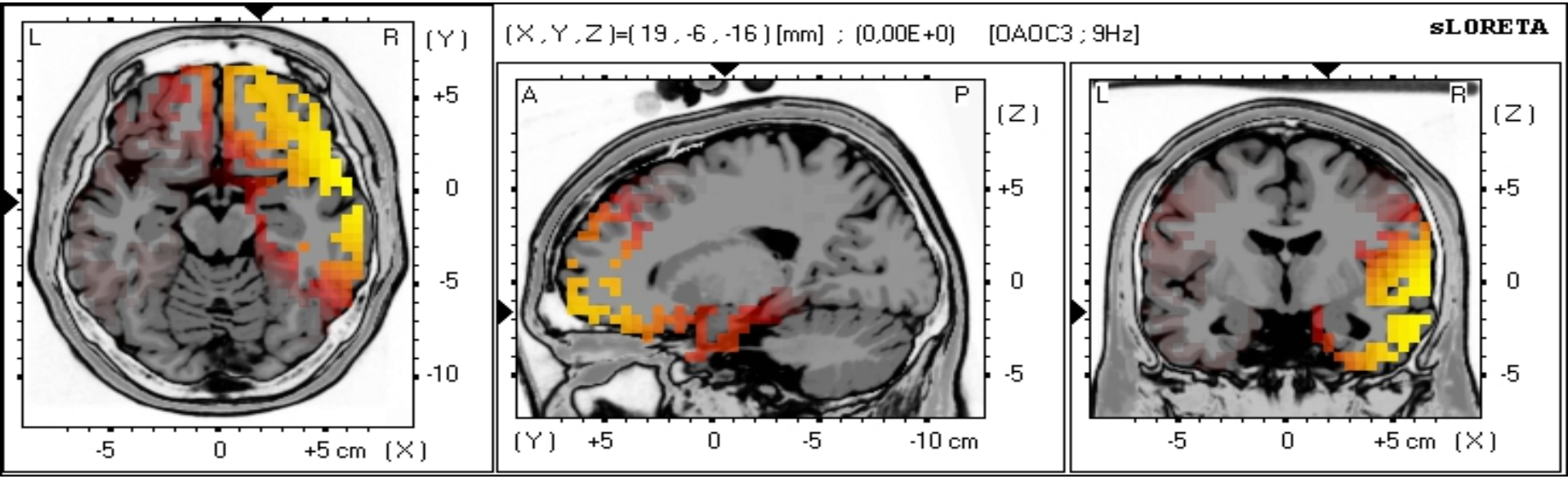


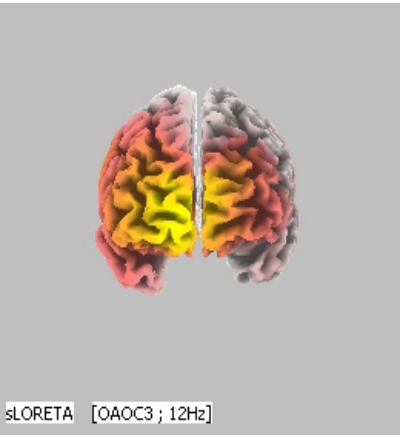
SX

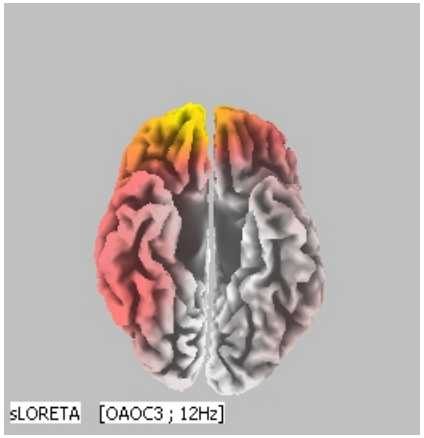


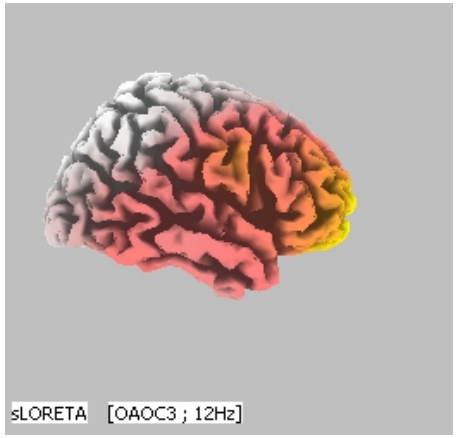
Best Match at 4 mm **Brodmann area 28**

Parahippocampal Gyrus **Limbic Lobe**

GRUPPO 3 OA-OC 12 HZ

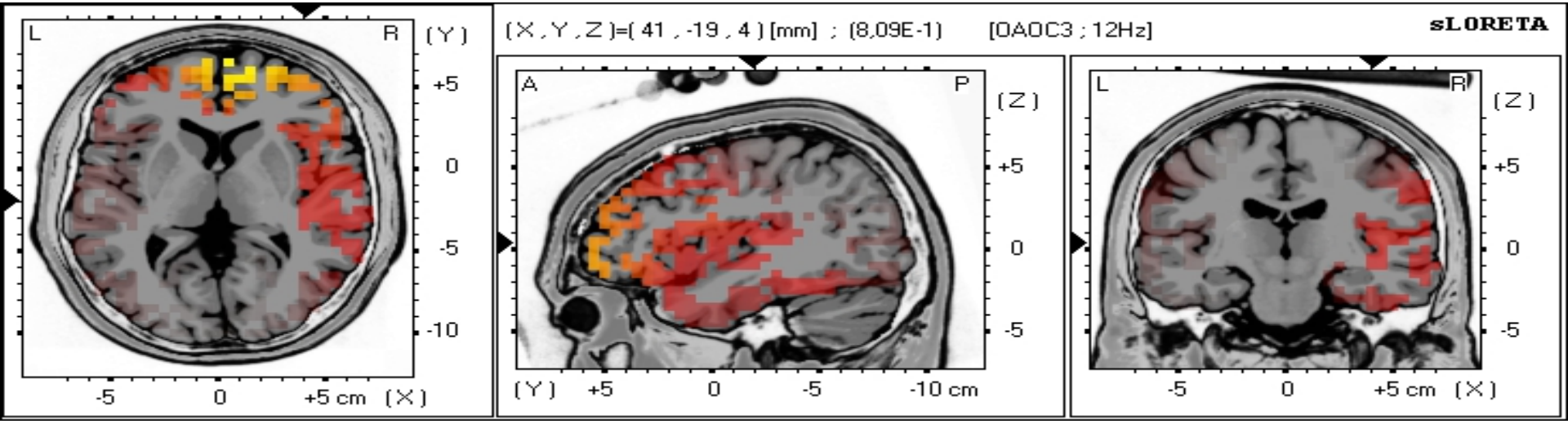






DX

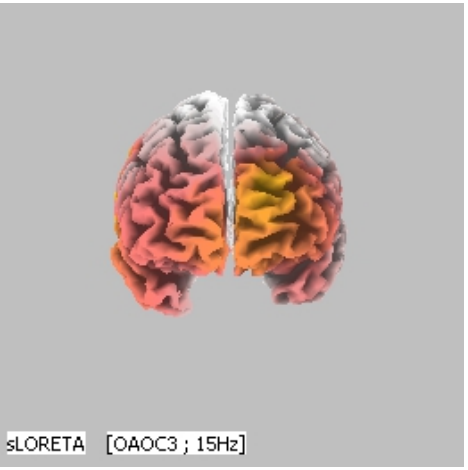
SX

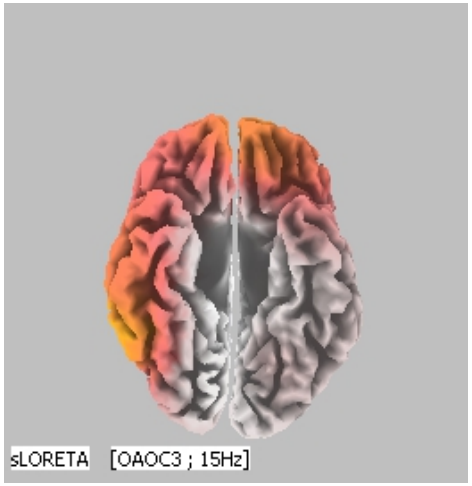


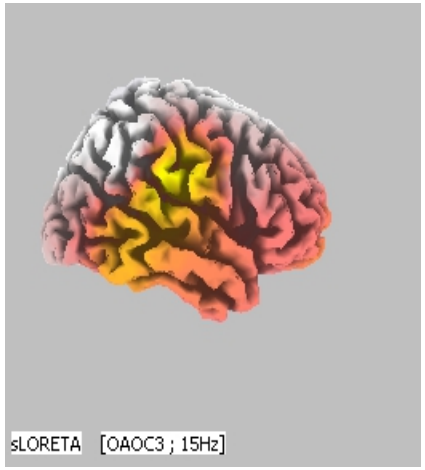
Best Match at 2 mm **Brodmann area 13**

Insula **Sub-lobar**

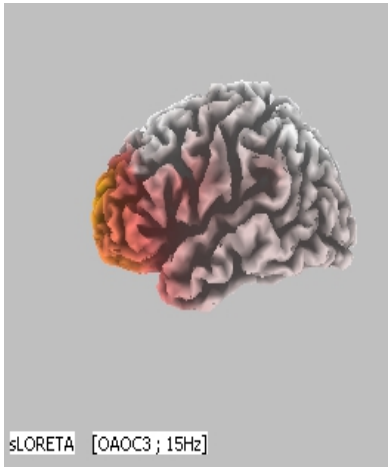
GRUPPO 3 OA-OC 15 HZ







DX



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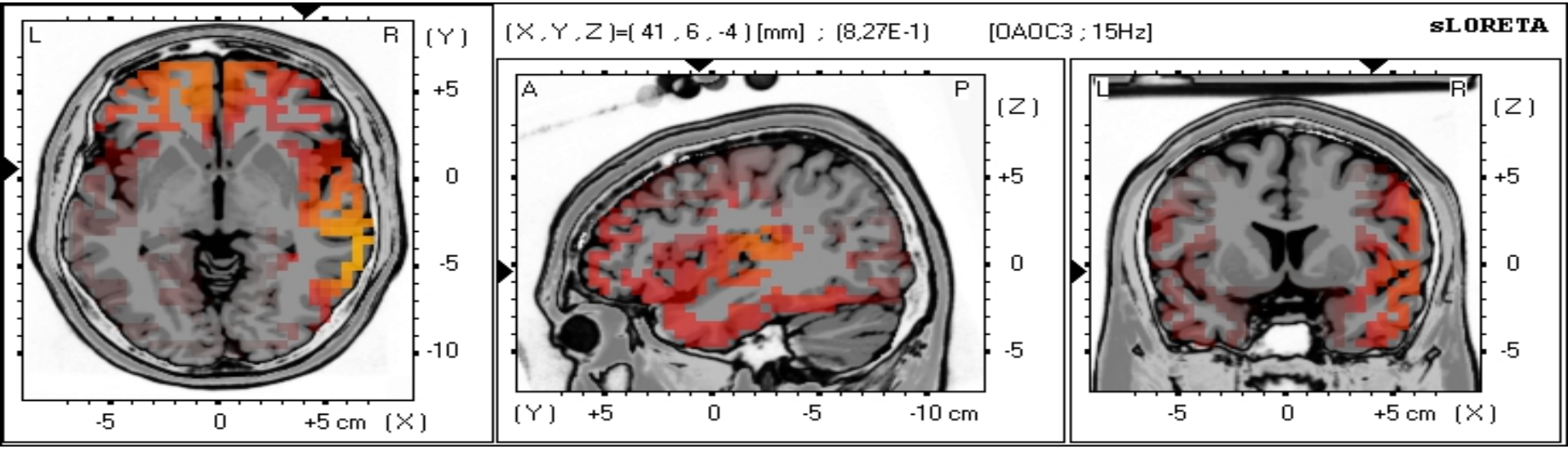
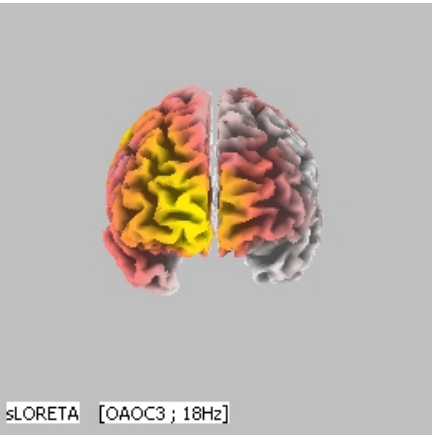
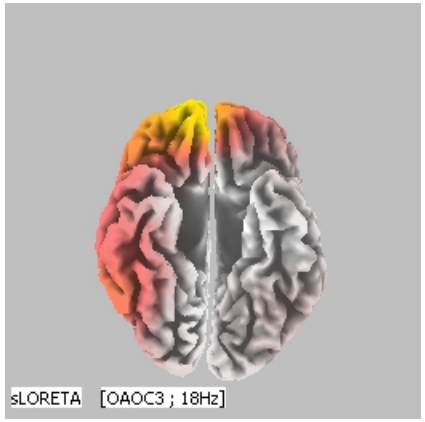


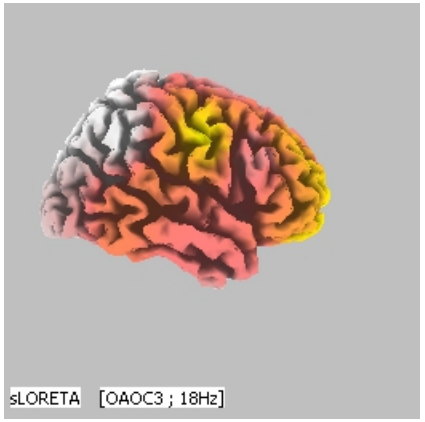
Best Match at 2 mm Brodmann area 13

Insula Sub-lobar

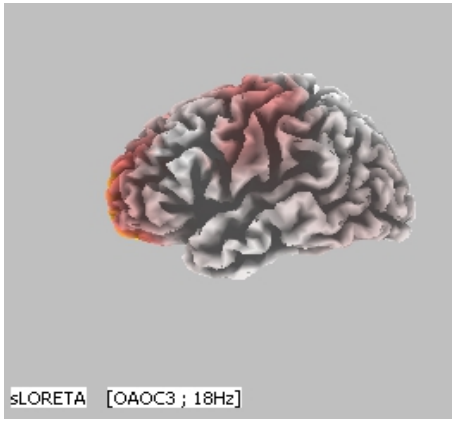
GRUPPO 3 OA-OC 18 HZ



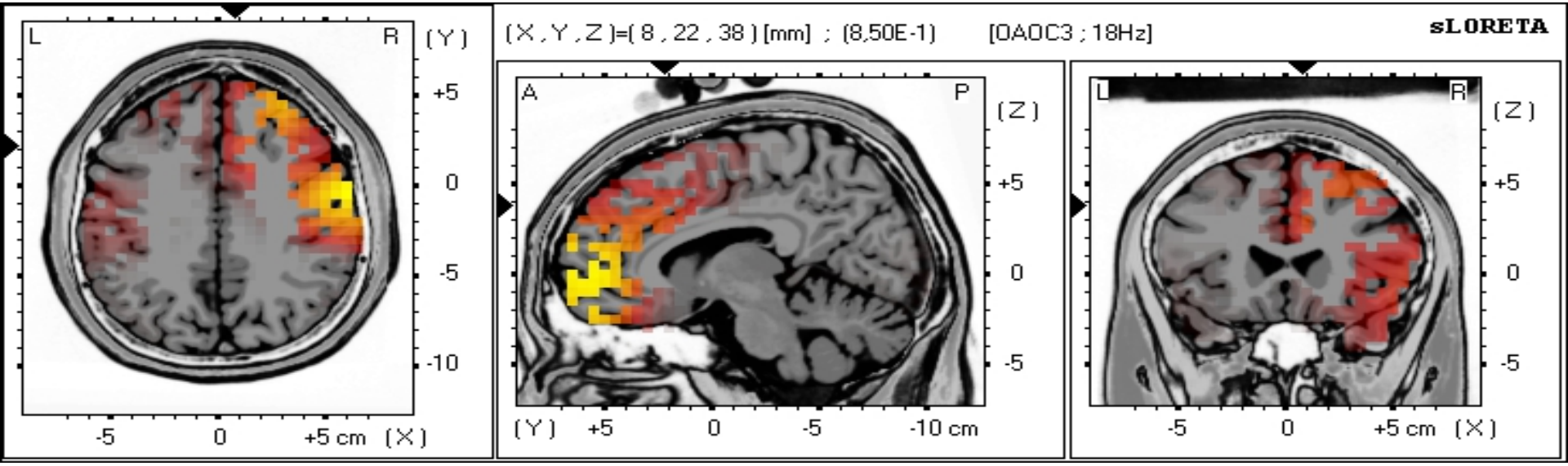




DX

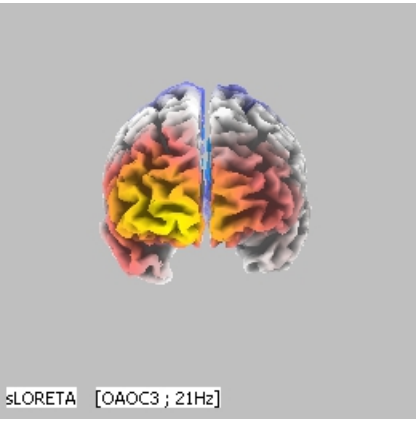


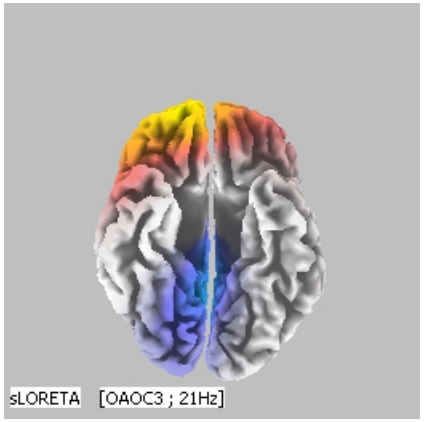
SX

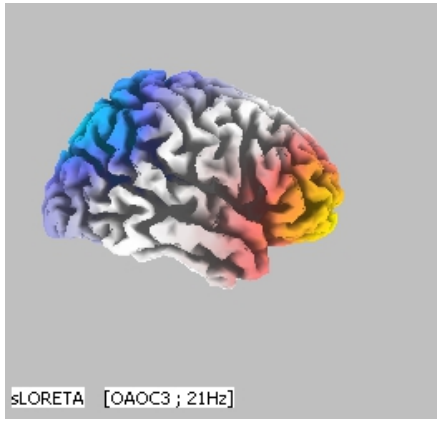


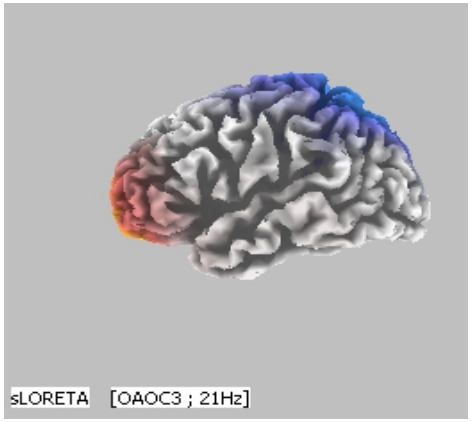
Best Match at 3 mm	**Brodmann area 32**
Cingulate Gyrus	**Frontal Lobe**

GRUPPO 3 OA-OC 21 HZ

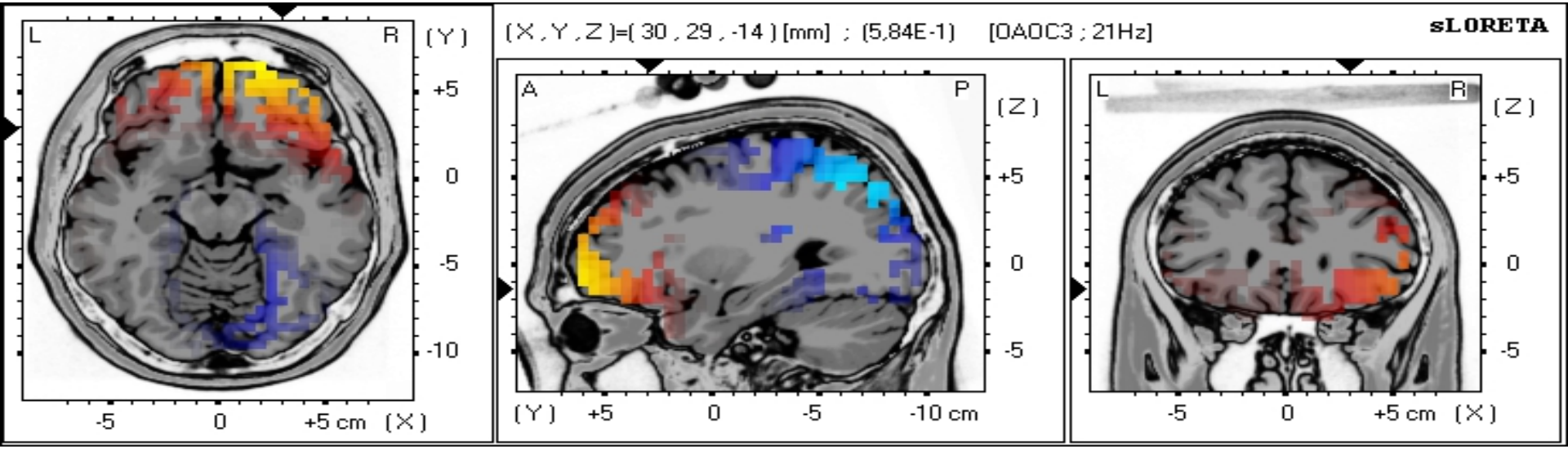








DX **SX**



Best Match at 3 mm Brodmann area 32

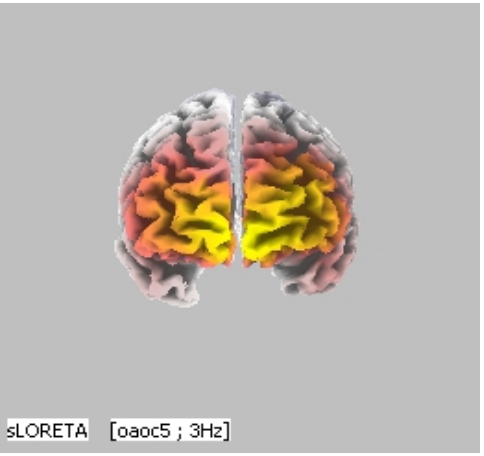
Cingulate Gyrus Frontal Lobe

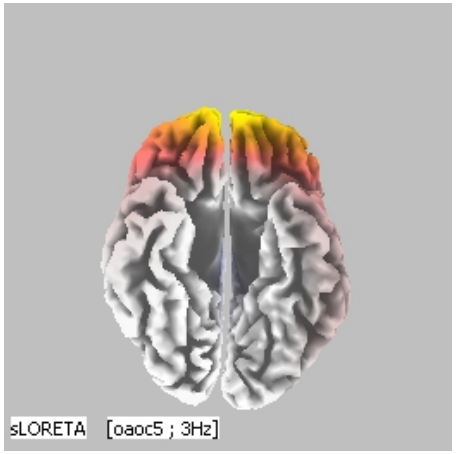
GRUPPO 5 OA OC

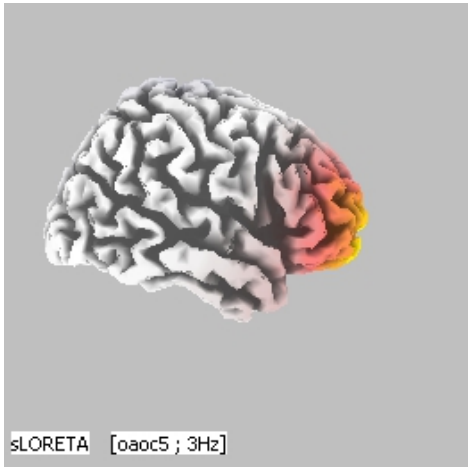
FREQUENZE 3 – 6 – 9 – 12 – 15 – 18 - 21 Hz

	t(0.01)	t(0.05)	t(0.10)
One-Tailed (A>B):	2.512	2.239	2.096
One-Tailed (A<B):	-2.494	-2.214	-2.081
Two-Tailed (A<>B):	2.612	2.336	2.228

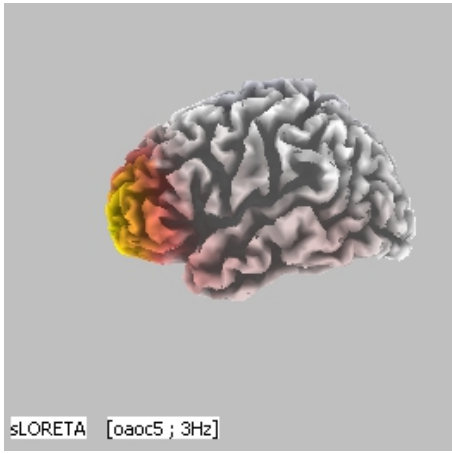
GRUPPO 5 OA-OC 3 HZ



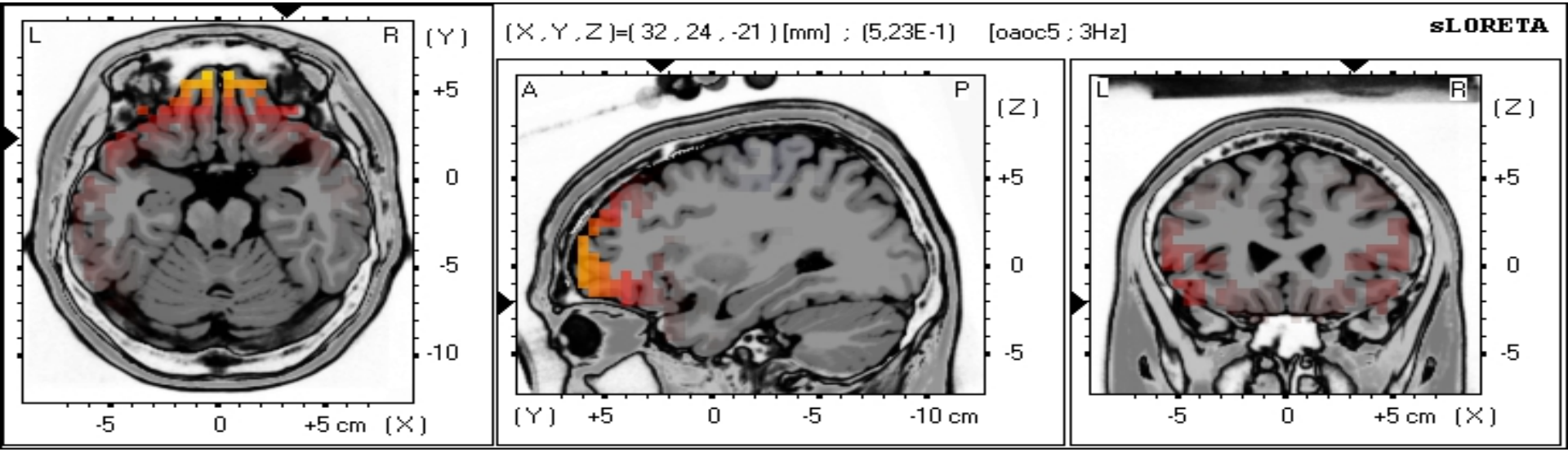




DX



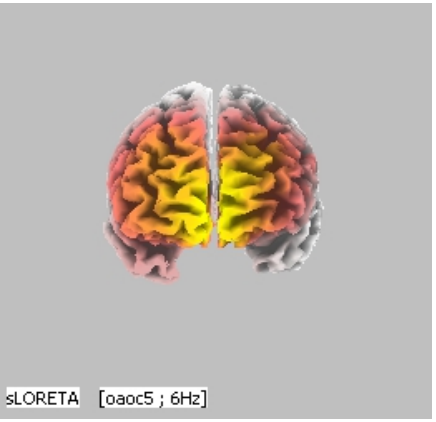
SX

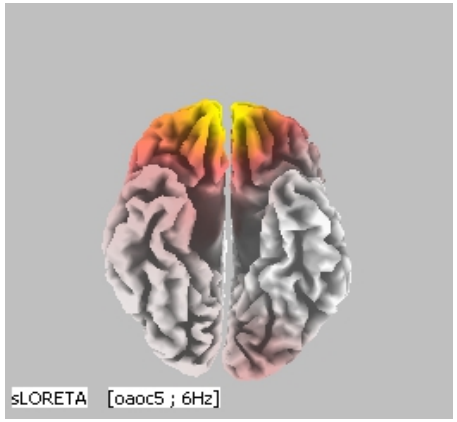


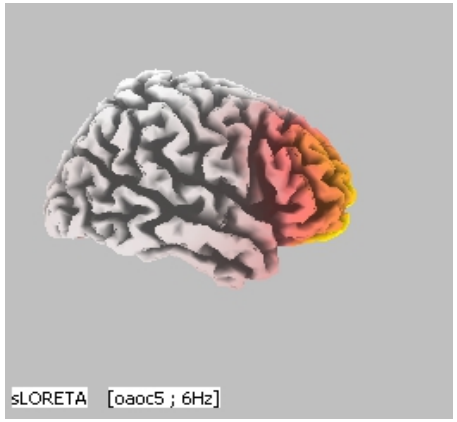
Best Match at 2 mm **Brodmann area 47**

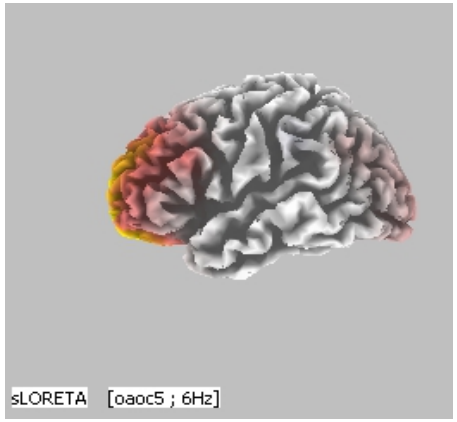
Inferior Frontal Gyrus **Frontal Lobe**

GRUPPO 5 OA-OC 6 HZ

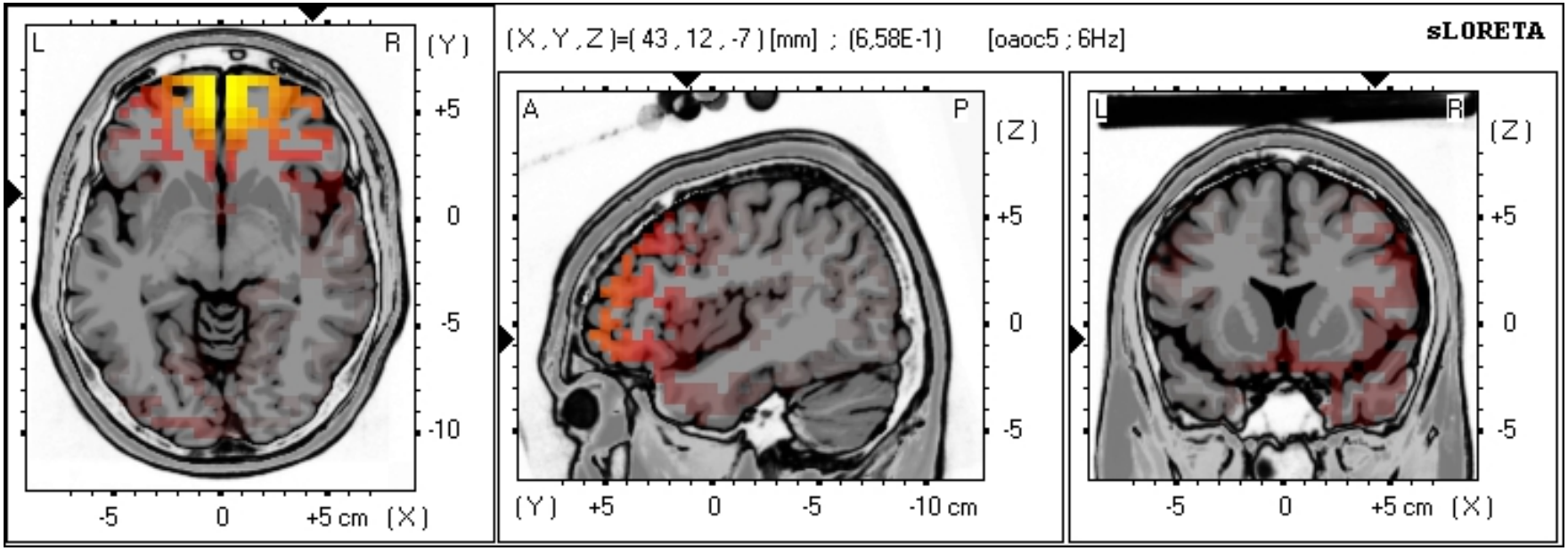








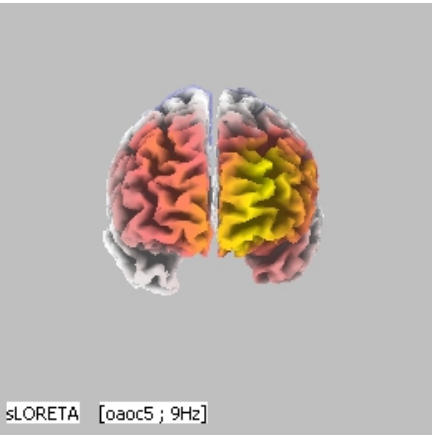
DX **SX**

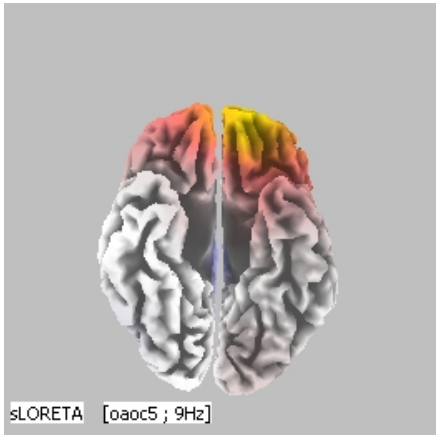


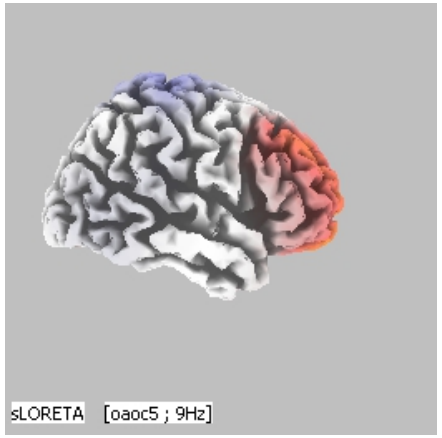
Best Match at 3 mm **Brodmann area 13**

Insula **Sub-lobar**

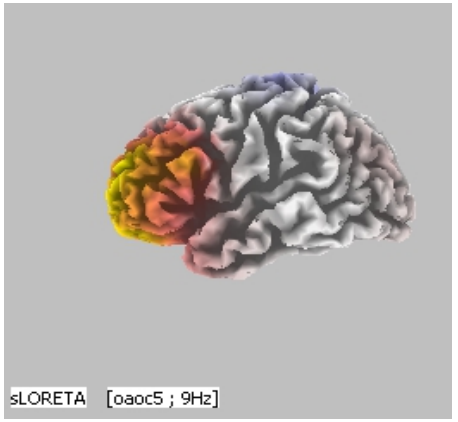
GRUPPO 5 OA-OC 9 HZ



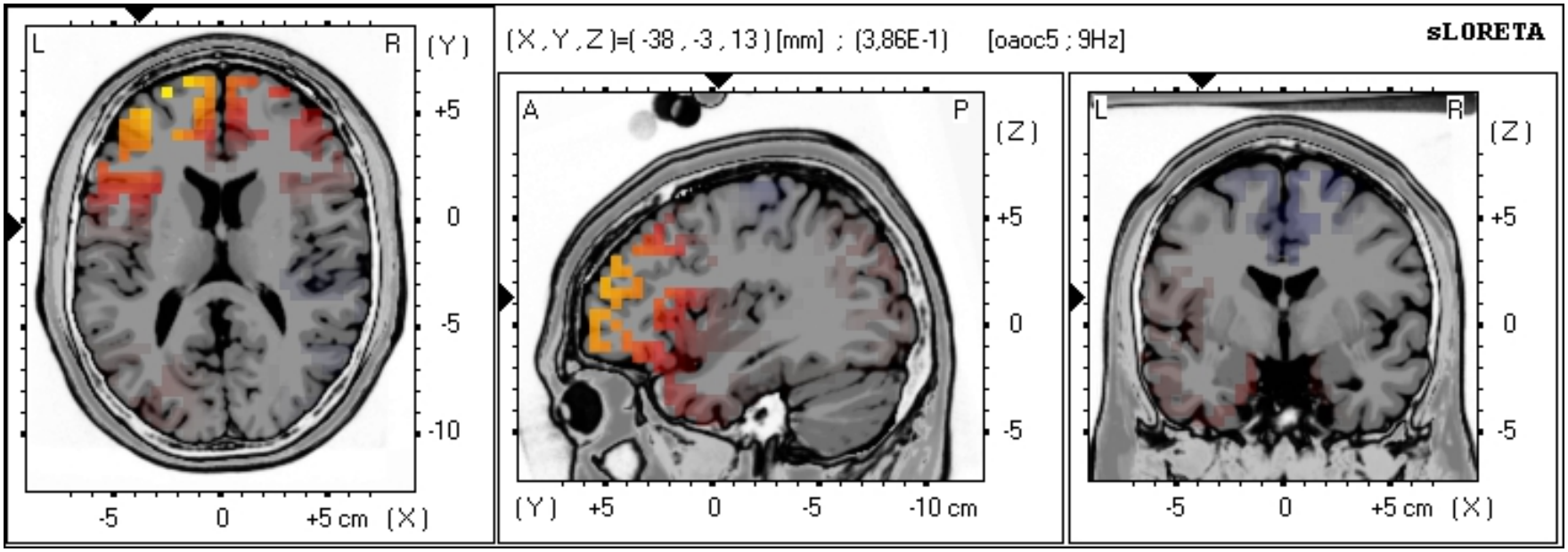




DX



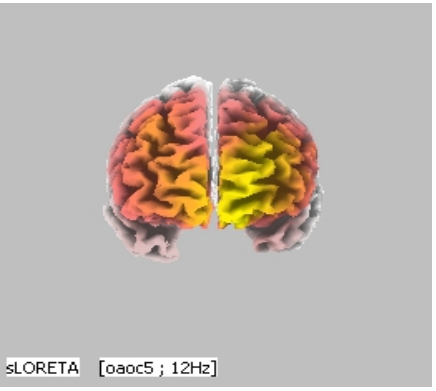
SX

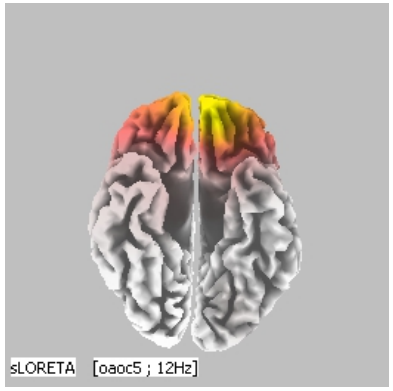


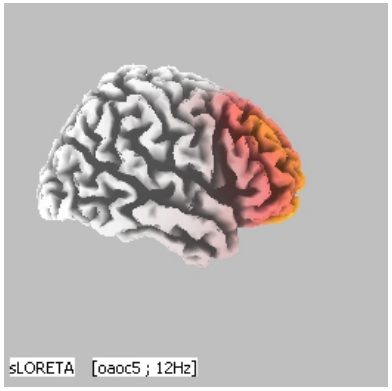
Best Match at 3 mm Brodmann area 13

Insula Sub-lobar

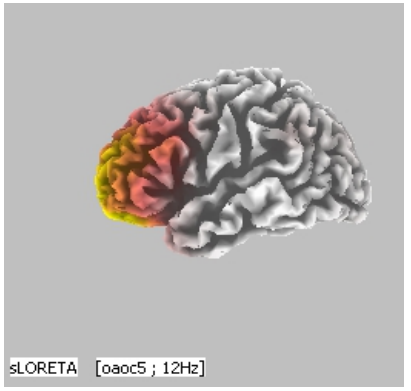
GRUPPO 5 OA-OC 12 HZ



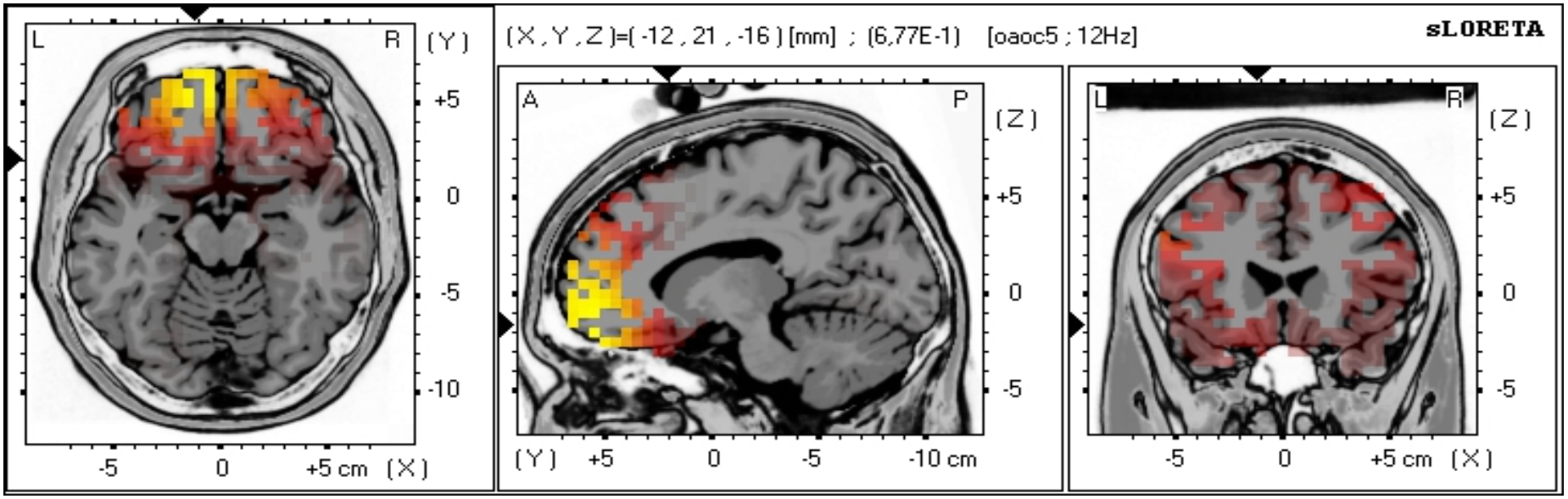




DX



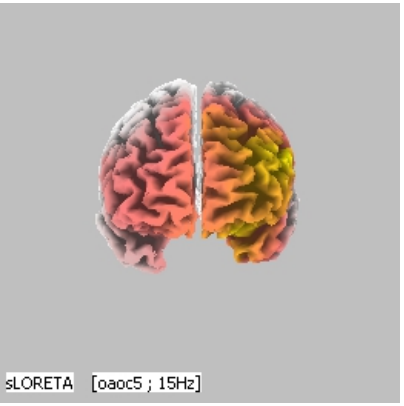
SX

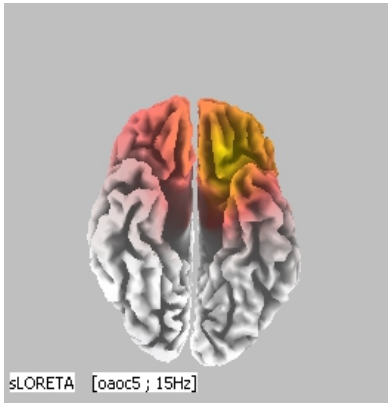


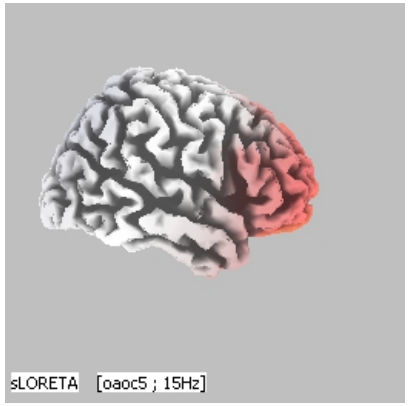
Best Match at 2 mm Brodmann area 25

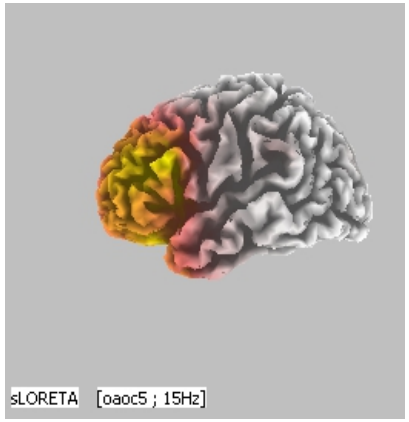
Medial Frontal Gyrus Frontal Lobe

GRUPPO 5 OA-OC 15 HZ

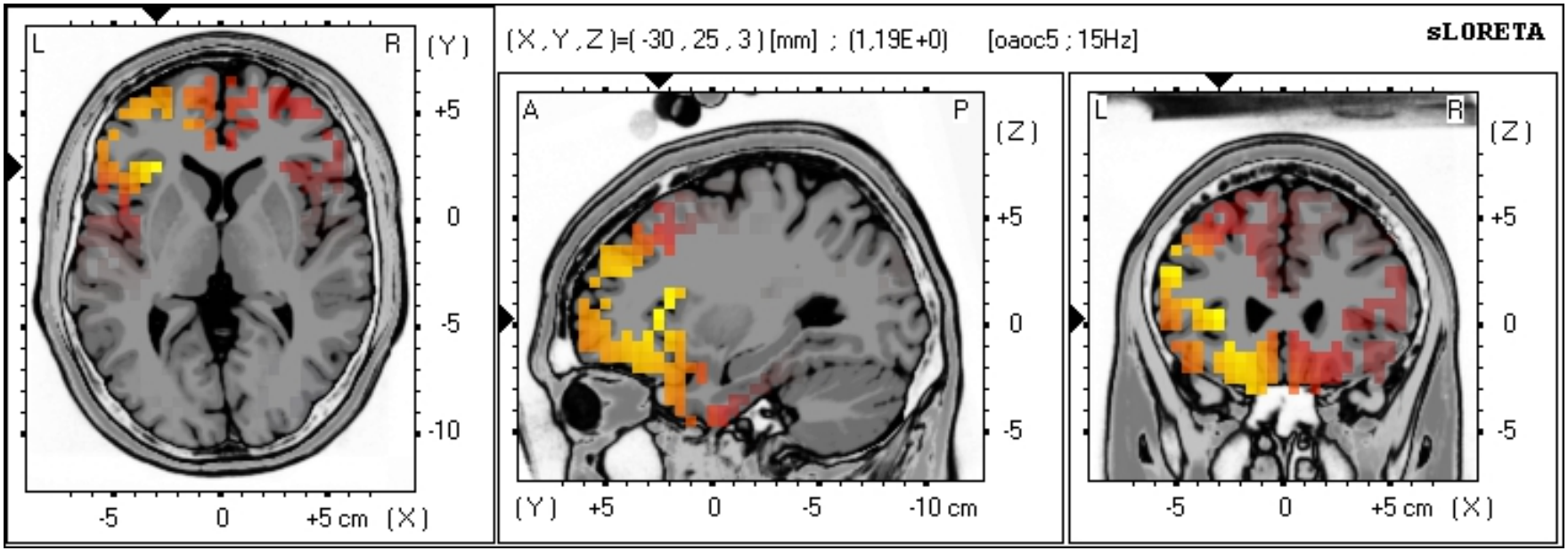








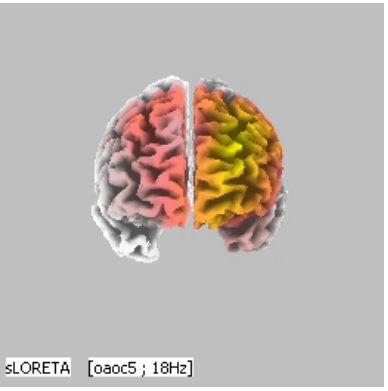
DX **SX**

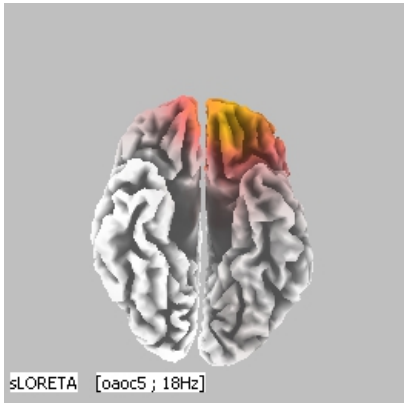


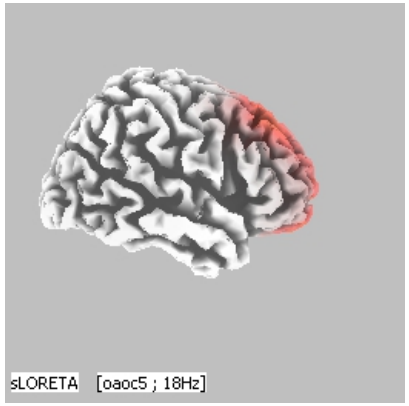
Best Match at 2 mm Brodmann area 45

Insula Sub-lobar

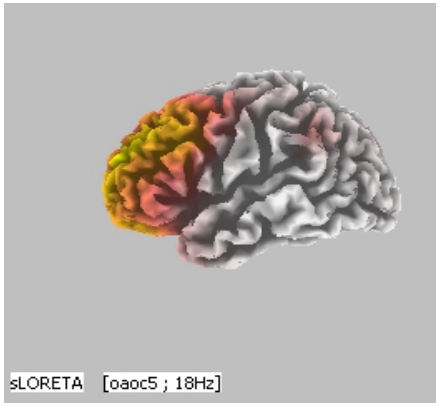
GRUPPO 5 OA-OC 18 HZ



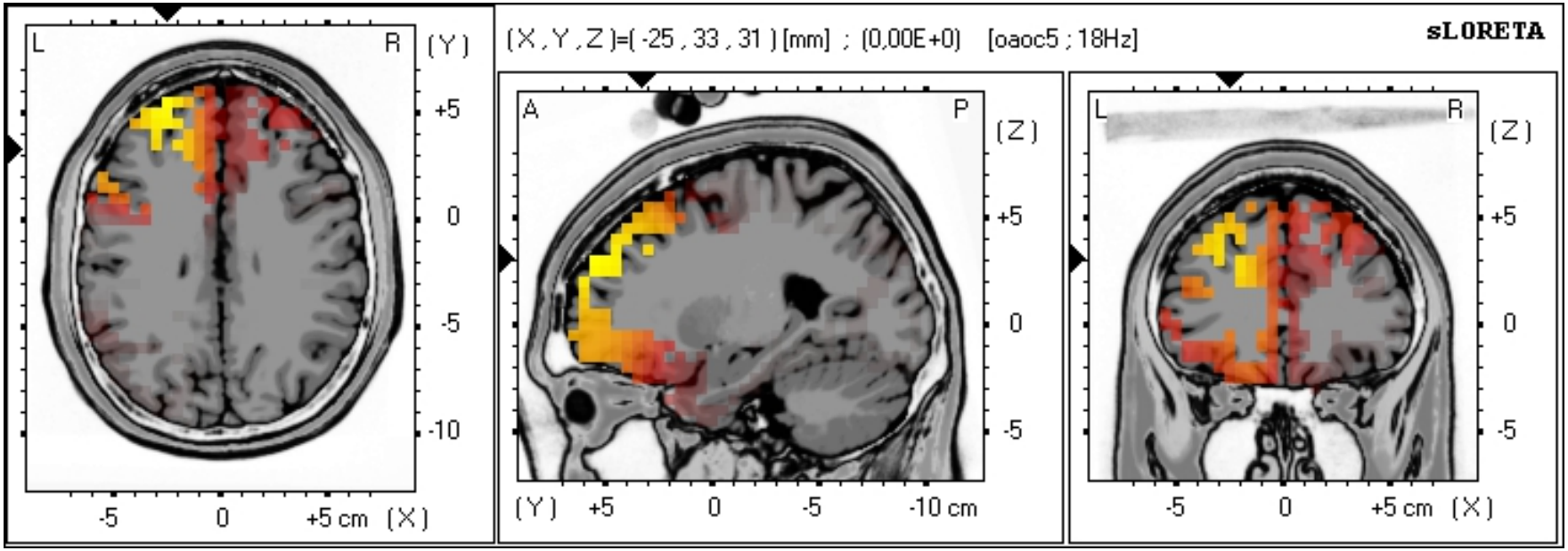




DX



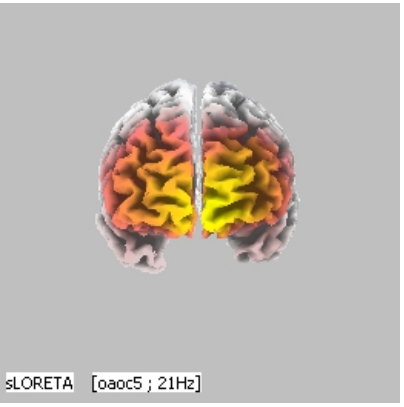
SX

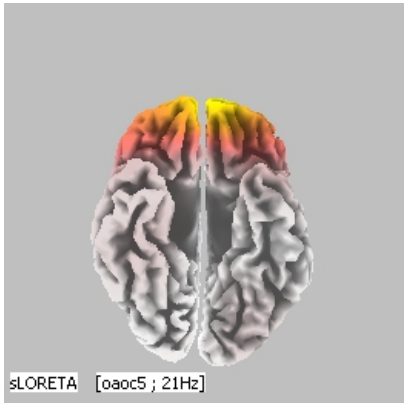


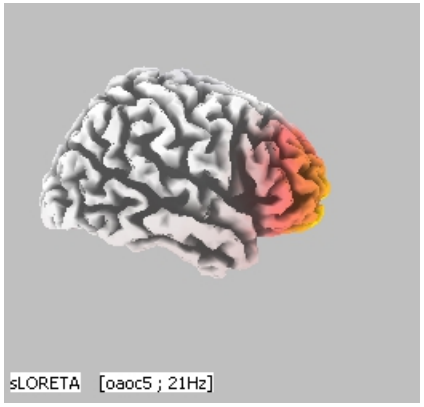
Best Match at 5 mm Brodmann area 9

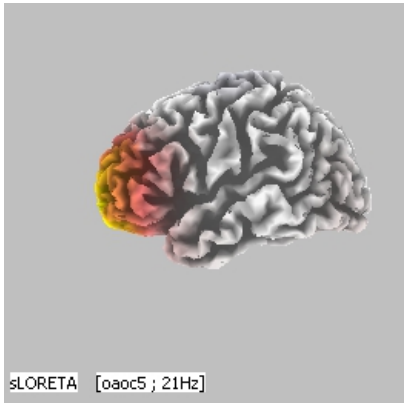
Sub-Gyral Frontal Lobe

GRUPPO 5 OA-OC 21 HZ

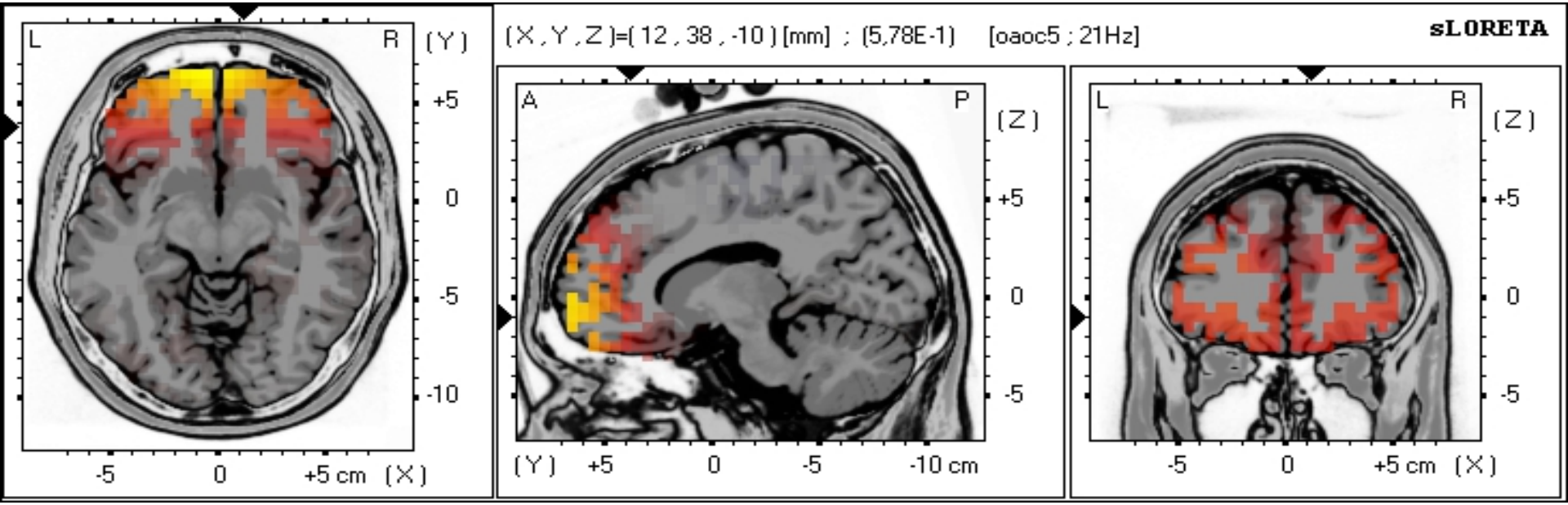








DX **SX**



Best Match at 3 mm Brodmann area 10

Medial Frontal Gyrus Frontal Lobe

CONCLUSIONI:

Dai dati descritti in questa presentazione si evincono le seguenti riflessioni:

La stimolazione HE-PAT© induce una lenta è progressiva sintonizzazione delle diverse regioni cerebrali che alla fine si estrinseca in modo massimale con la simmetria dei lobi frontali.

Le regioni cerebrali interessate dalla stimolazione HEPAT© sono :

A. **Insula**
B. **Lobi temporali**
C. **Cingolato anteriore**
D. **Lobi frontali**

La stimolazione PinC© (EU, US, Int. Pat. Pending) con il dispositivo medico HEPAT© (EU, US, Int. Pat. Pending) agisce sui sistemi NEUROLOGICI coinvolti nelle seguenti funzioni:

● Attenzione ● Memoria ● Regolazione neurovegetativa

● Regolazione emotiva ● Programmazione e regolazione progettuale

Con questa semplice metodica possiamo accedere a processi che altrimenti non potrebbero essere accessibili e con questo realizzare una resincronizzazione con un livello di invasività sostanzialmente nullo delle diverse funzioni psicocomportamentali. L'effetto è applicabile sia alle persone che vogliono migliorare le loro prestazioni cognitivo-emotive che ai soggetti affetti da patologie cognitivo - emotive che presentano anomalie organizzative e di regolazione psicocomportamentale.

Sarà utile sviluppare ulteriori studi che ci permettano di verificare tempi e metodi per attuare al meglio i benefici effetti autoregolanti di questa stimolazione denominata "PinC" (oltre ad eventuali altri complessi sonori già realizzati), la quale apre una nuova strada di sviluppo e regolazione delle funzioni psicocomportamentali, applicabile sia in ambito clinico che nelle diverse attività quotidiane. I protocolli attualmente utilizzati sono:

- Protocollo "Finsterle" (Ufficiale – Depositato Ministero Della Salute): somministrazione quotidiana "at home" con colloquio di controllo da parte di un medico (formato all'utilizzo) per le prime due settimane in caso di soggetti con disturbi psicologico-psichiatrici;

- Protocollo "Urbani": somministrazione settimanale, con scrittura degli eventi significativi da parte del paziente e colloquio settimanale, con feedback anche telefonico per sei sedute;

- Protocollo "Ospedale San Paolo - Polo Universitario" per acufeni/depressione: somministrazione quotidiana "at home" con feedback telefonico settimanale per due mesi.

GRAZIE PER L'ATTENZIONE