



UNIVERZITET U SARAJEVU
ELEKTROTEHNIČKI FAKULTET SARAJEVO

IZVJEŠTAJ VJEŽBE 7

BIOMEDICINSKI SIGNALI I SISTEMI

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Indeks: 1689/17993

Odsjek: Računarstvo i Informatika

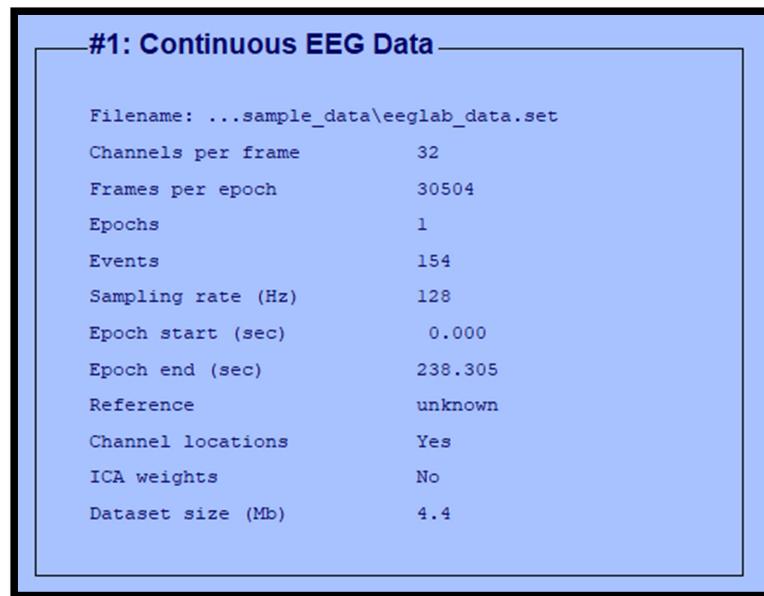
Datum:

21.05.2020

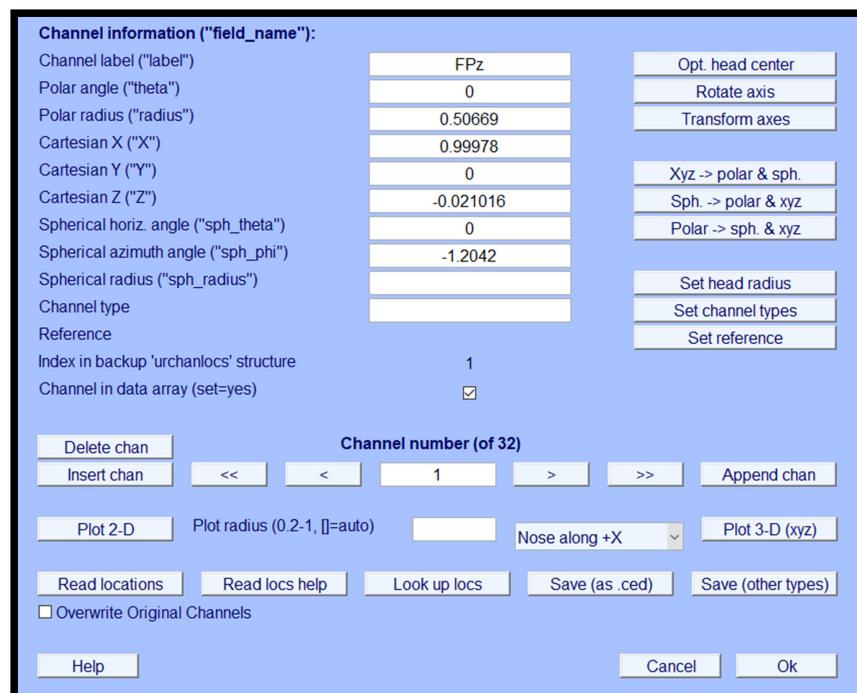
Potpis:

a) Ucitajte set podataka unutar EEGLAB okruzenja sa vrijednostima EEG signala, prateći upute koje ste dobili uz prethodnu laboratorijsku vježbu. Ucitajte lokacije elektroda, filtrirajte signal niskopropusnim filterom sa granicnom frekvencijom 40 Hz, i izvršite ekstrakciju epoha pri cemu se epohiranje vrši prema pojavi referentnog dogadaja "square" u signalu.

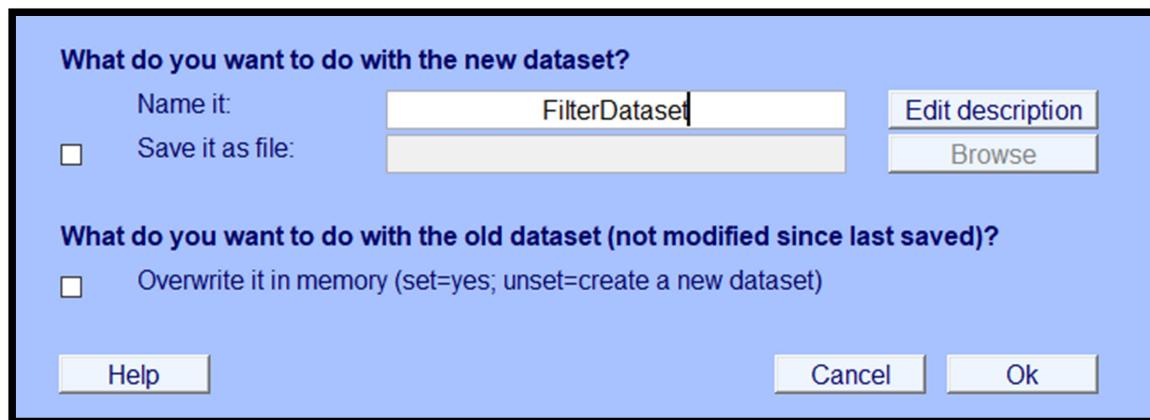
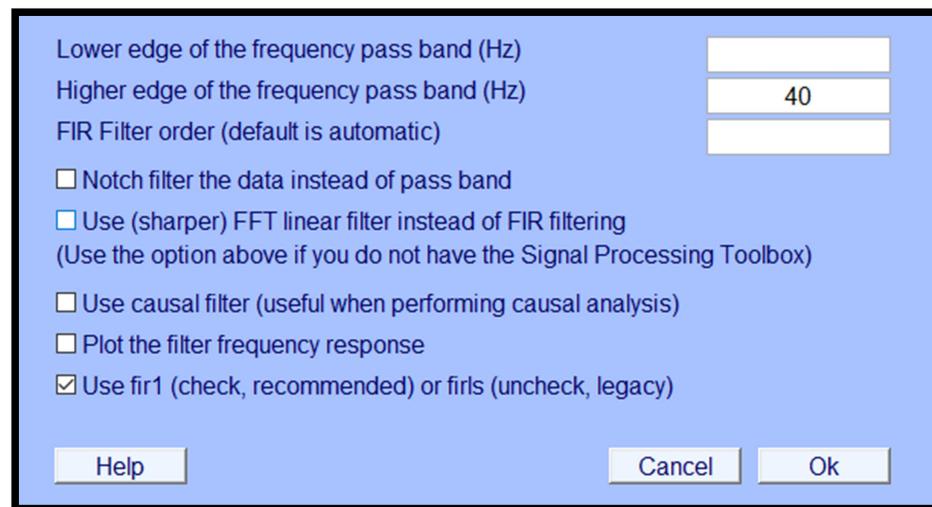
Ucitavanje dataseta:



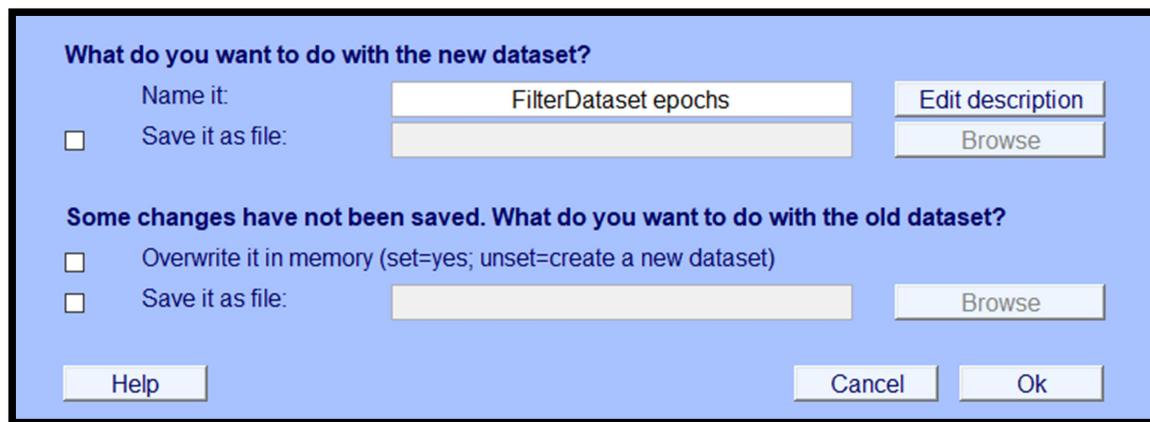
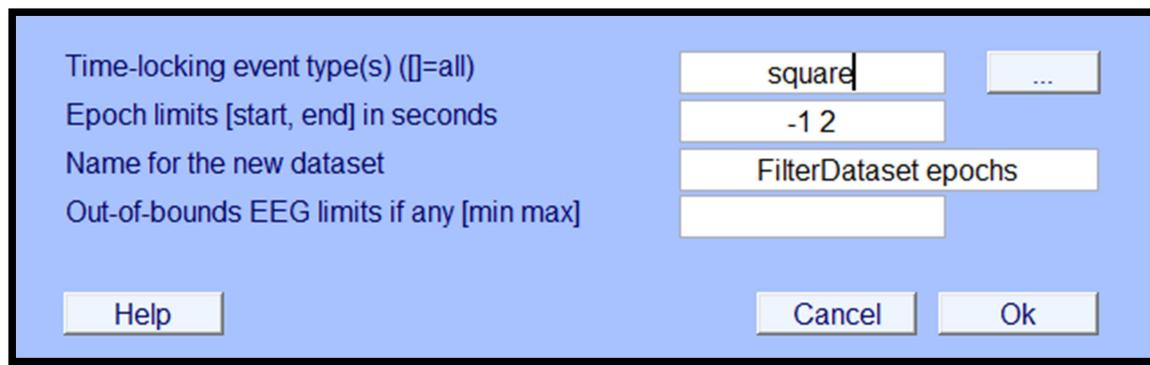
Lokacije elektroda:



Kreiranje filtera i novih datasetova:



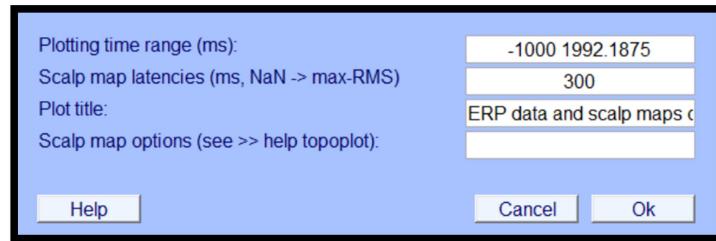
#2: FilterDataset	
Filename:	none
Channels per frame	32
Frames per epoch	30504
Epochs	1
Events	154
Sampling rate (Hz)	128
Epoch start (sec)	0.000
Epoch end (sec)	238.305
Reference	unknown
Channel locations	Yes
ICA weights	No
Dataset size (Mb)	4.4



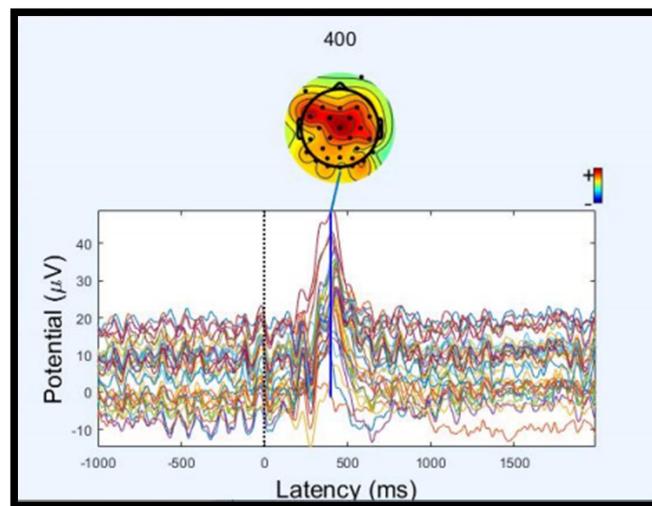
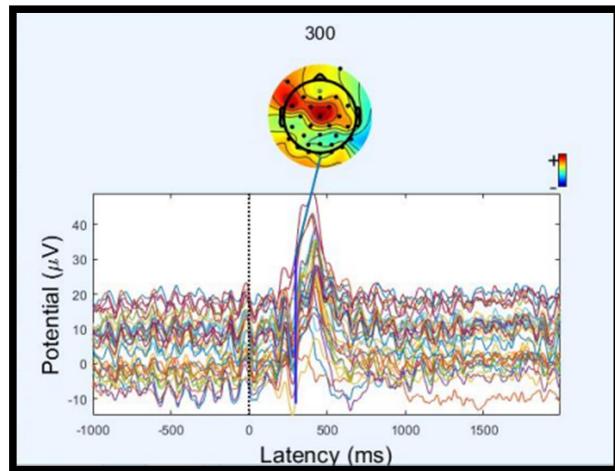
#3: FilterDataset epochs	
Filename:	none
Channels per frame	32
Frames per epoch	384
Epochs	80
Events	157
Sampling rate (Hz)	128
Epoch start (sec)	-1.000
Epoch end (sec)	1.992
Reference	unknown
Channel locations	Yes
ICA weights	No
Dataset size (Mb)	4.3

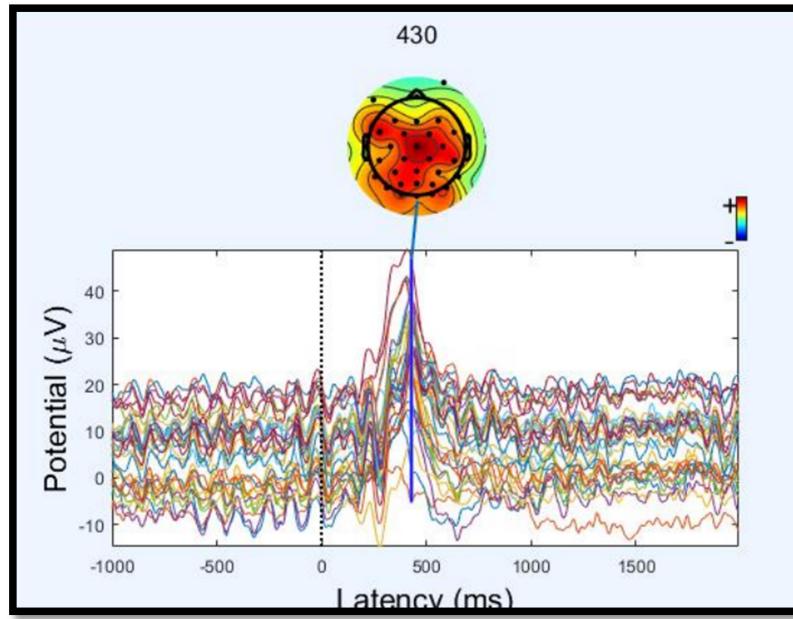
b) Iscrtajte usrednjenu vrijednost EP signala za sve epohe seta podataka zajedno sa 2D topografskim prikazom mapa glava za izabrana kasnjenja od 300, 400 i 430ms. Prokomentarisite kakva je razlika u distribuciji uprosjecenog EP-a, za zadate trenutke. Sta se moze zaključiti analizom ove distribucije?

Primjer postavke za 300ms:



Mijenjajuci samo vrijednosti za trazena kasnjenja imamo:

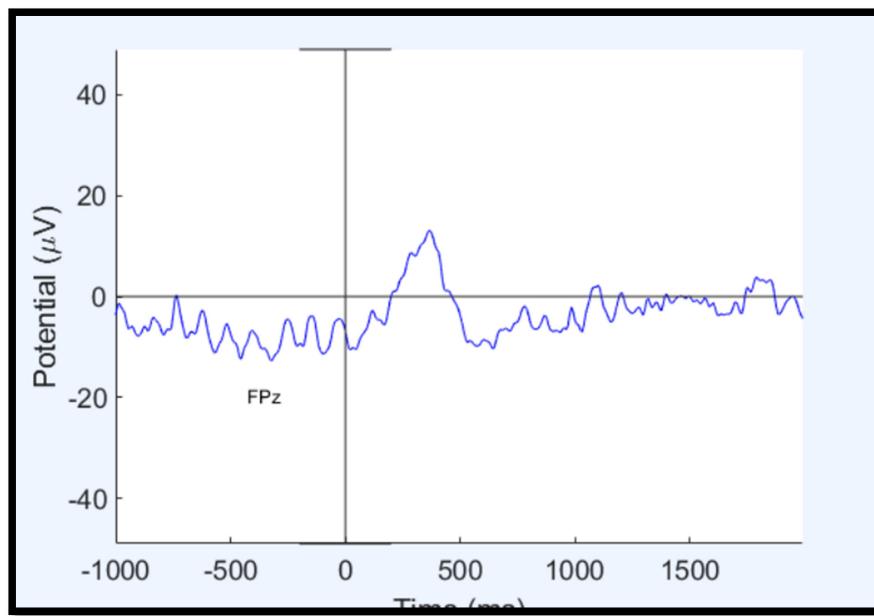


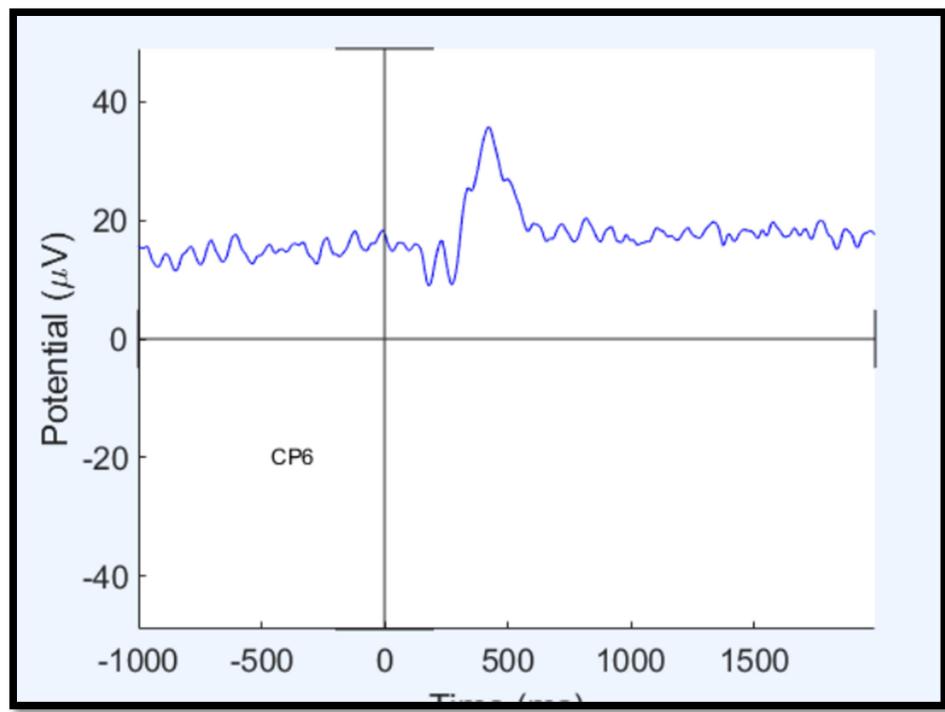
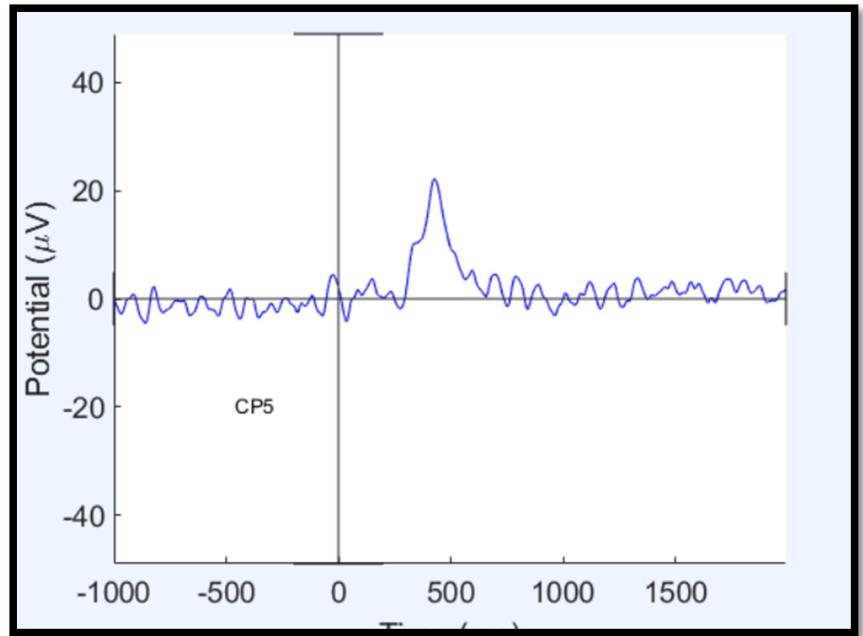


Poređenjem topografske slike glave za kašnjenja od 300, 400 i 430 ms, vidimo da ukoliko je veće kašnjenje to je i potencijal ehopa veći.

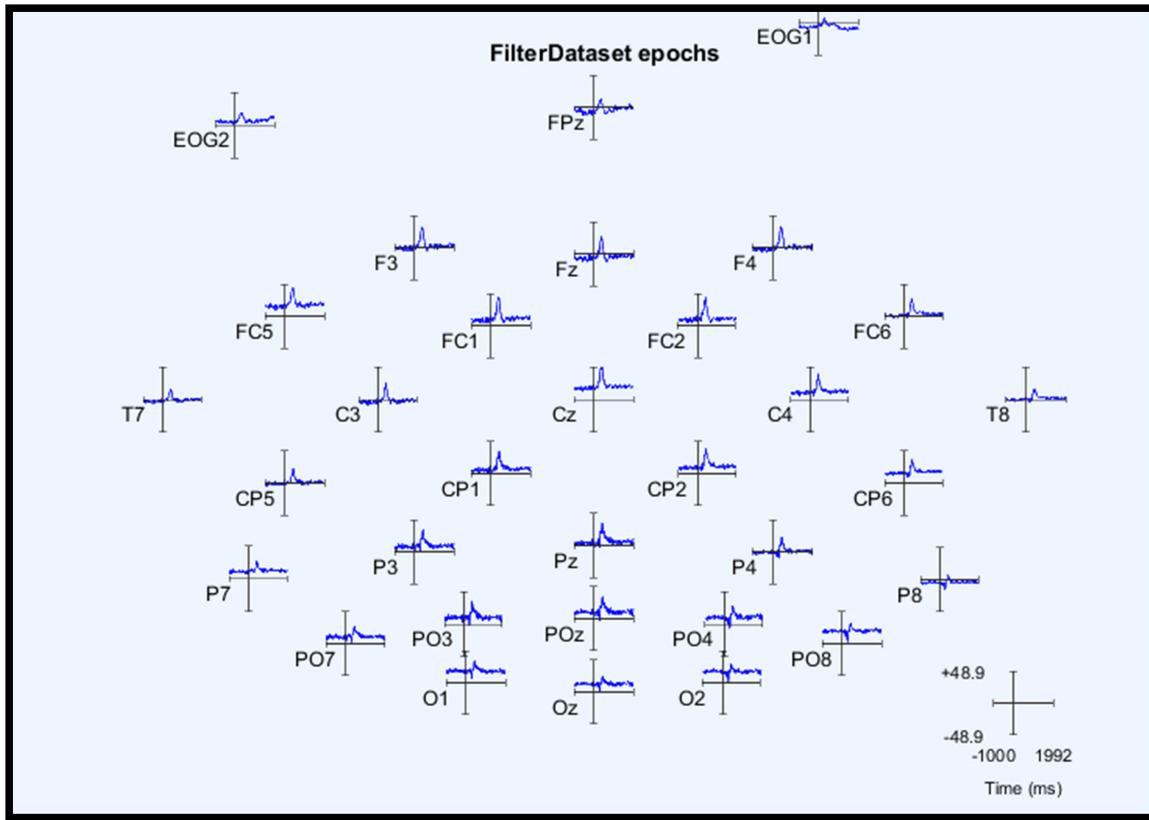
c) Prikazite vremensku promjenu EP signala za kanale FPz, CP5 i CP6.

Vremenske promjene su date respektivno za trazene kanale (FPz, CP5, CP6):

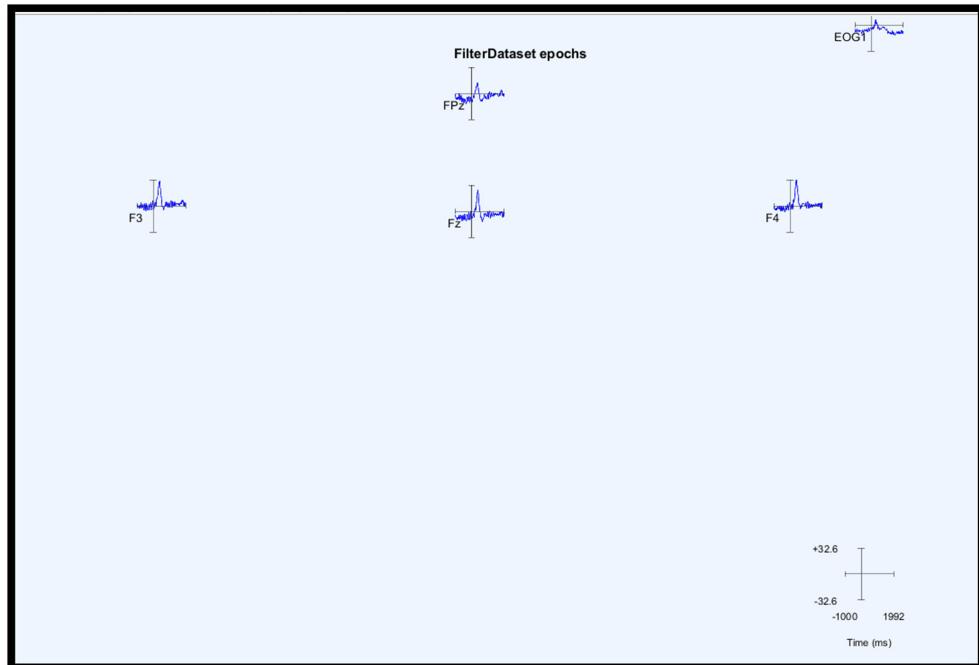




Vremenski prikaz svih kanala:

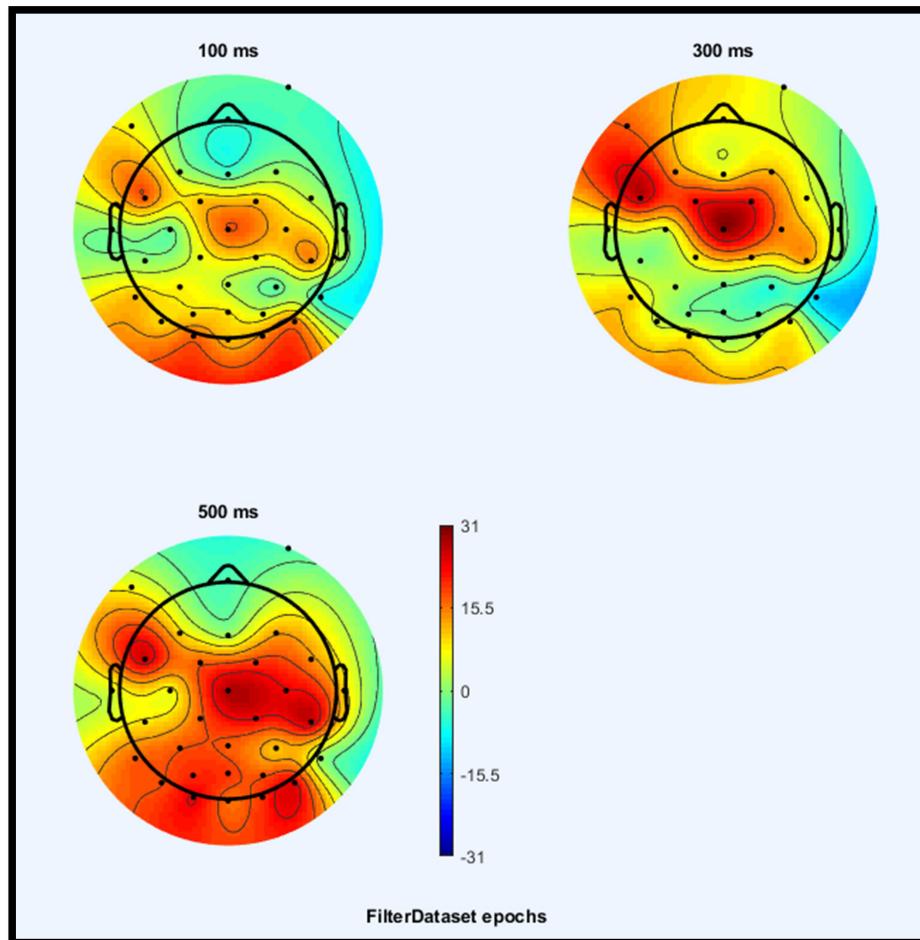
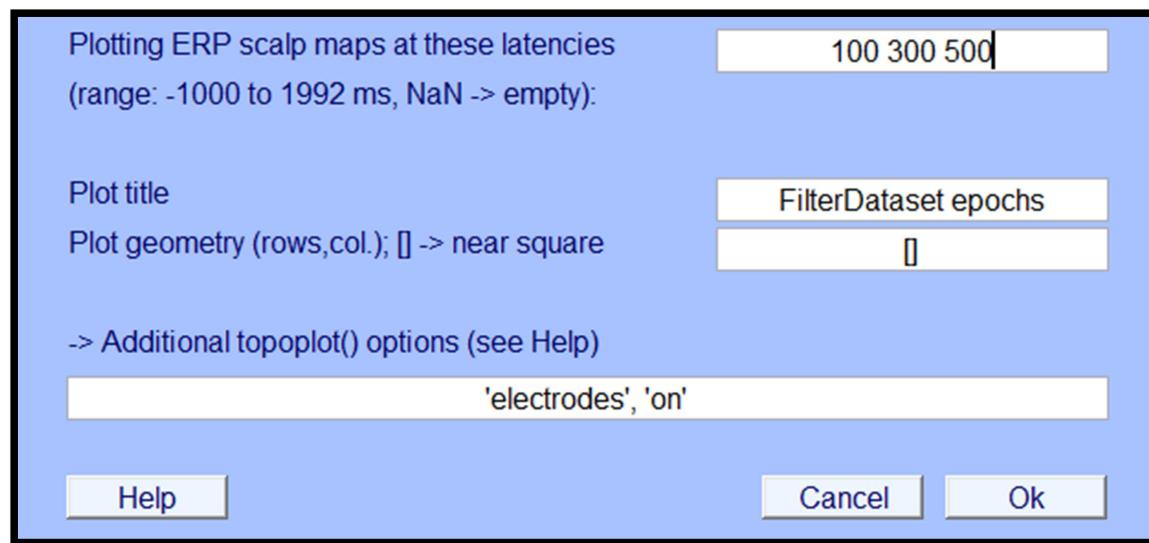


d) Prikazite vremenske odzive EP signala za prvih pet kanala, pri cemu su signali prikazani u okviru kolona. Sta moze biti prednost ovakvog prikaza signala?



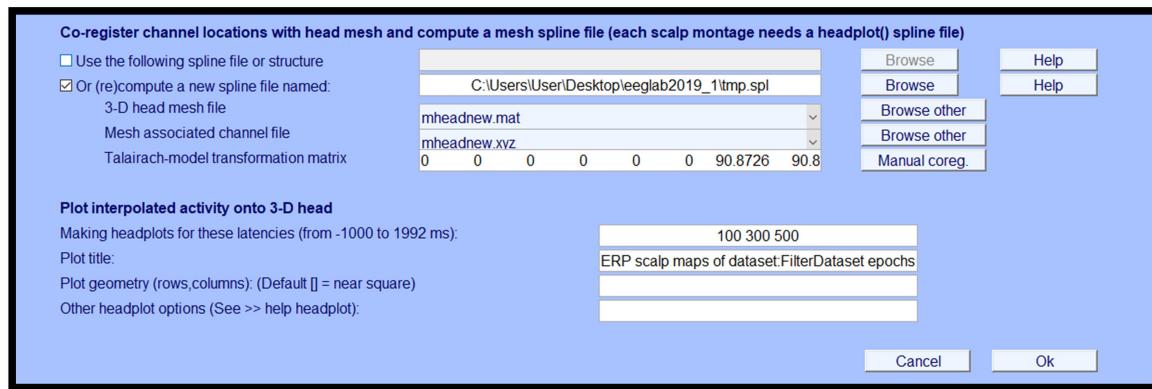
Prednost ovakvog prikaza je jednostavnost koju pruza za poređenje specifičnih signala.

- e) Prikazite usrednjene vrijednosti EP signala na 2D topografskom prikazu mapa glave za kasnjenja od 100, 300 i 500ms.



f) Prikazite usrednjene vrijednosti EP signala na 3D topografskom prikazu mape glave za kasnjenja od 100, 300 i 500ms.

Podešavanje postavki za 3D prikaz mape glave:



3D topografski prikaz mape glave za navedena kašnjenja:

