

# Quantitative Features of EEG Recorded in the Delivery Room Immediately After Birth

EEG features from term infants recorded minutes after birth. To accompany publication:

D Finn, JM O'Toole, EM Dempsey, GB Boylan, EEG for the Assessment of Neurological Function in Newborn Infants Immediately After Birth, 2018, under review.

Features are generated using NEURAL (version 0.3.4; [code on github](#)); see reference [1] for more details.

## Files

- `qEEG_term_newborns_delivery_suite_ANON.csv`: feature set as comma-separated variable file. Will open in Excel (or equivalent).
- `LICENCE.md`: terms of use.

Brief description of each feature:

column name	description
<code>spectral_power__1__</code>	spectral power (delta band = 0.5 to 4 Hz)
<code>spectral_power__2__</code>	spectral power (theta band = 4 to 7 Hz)
<code>spectral_power__3__</code>	spectral power (alpha band = 7 to 13 Hz)
<code>spectral_power__4__</code>	spectral power (beta band = 13 to 30 Hz)
<code>spectral_relative_power__1__</code>	relative spectral power (for each band)
<code>spectral_relative_power__2__</code>	
<code>spectral_relative_power__3__</code>	
<code>spectral_relative_power__4__</code>	
<code>spectral_edge_frequency</code>	frequency (Hz) below which 95% spectral power resides
<code>FD</code>	fractal dimension (using Higuchi method)
<code>rEEG_median</code>	median rEEG (rEEG similar to aEEG)
<code>rEEG_lower_margin</code>	lower margin (5th percentile) of rEEG
<code>rEEG_upper_margin</code>	upper margin (95th percentile) of rEEG
<code>rEEG_asymmetry</code>	symmetry between upper, lower, and median rEEG

## References

1. JM O'Toole and GB Boylan (2017). NEURAL: quantitative features for newborn EEG using Matlab. ArXiv e-prints, arXiv:1704.05694.

## Contact

John M. O' Toole

Neonatal Brain Research Group,  
INFANT: Irish Centre for Fetal and Neonatal Translational Research,  
Department of Paediatrics and Child Health,  
Room 2.19 Paediatrics Bld, Cork University Hospital,  
University College Cork,  
Ireland

Email: jotoole AT ucc. ie