EEG Frequency Bands, Emotional States, and Signal Injection Effects

This reference sheet summarizes canonical EEG frequency bands, their associated cognitive or emotional states, and how external signal injection (mimic vs. inverse) could influence these rhythms. It draws on classical neuroscience, Persinger's neuromodulation research, and speculative extensions involving Aharonov–Bohm (ABE) field coupling.

EEG Band	Frequency (Hz)	Associated States	Mimic Injection	Inverse Injection
Delta	0.5–4	Deep sleep, unconscious processes	Promotes drowsiness, sedation	May disrupt restorative sleep or induce micro■arousals
Theta	4–8	Memory access, hypnagogic imagery, emotional arousal	Increases suggestibility; ~6.5 Hz often linked in literature to fear/sensed■presence	Suppresses emotional recall, reduces fear/aggression biases
Alpha	8–12	Relaxation, calm focus	Induces calm, meditative states	Blocks relaxation, increases irritability
Beta	13–30	Active thinking, alertness, high stress	Heightens vigilance and problem solving; may raise anxiety	Reduces stress responses; dampens focused arousal
Gamma	30–100	Sensory binding, high■level cognition	Boosts perceptual integration; at high drive may cause overload	May reduce coherence and impair integration across networks

Note: Associations are broad and context■dependent; effects of mimic/inverse injection are probabilistic and depend on state, dose, and spatial targeting. Extending these ideas to ABE remains speculative.