**EEG-BASED EMOTION RECOGNITION**

**Types of EEG features detected:-**

1. Valence: positive, happy emotions results in a higher frontal coherence in alpha, and higher right parietal beta power, compared to negative emotion.
2. Arousal: excitation presented a higher beta power and coherence in the parietal lobe, plus lower alpha activity.
3. Dominance: strength of an emotion, which is generally expressed in the EEG as an increase in the beta/alpha activity ration in the frontal lobe, plus an increase in beta activity at the parietal lobe.

**EEG Recordings:-**

10 - 20 System: from 10% above the nasion( the dent at the top of the nose) and anion(boney bump at the back of the skull), along the vertical line, a theoretical circle is drawn around the head. The other electrodes are positioned maintaining a 20% inter-electrode distance

**Stimuli Set Construction:-**

There are two libraries with emotion-annotated images(IAPS) and sounds (IADS) available for non-profit research, which are very useful for emotion research.

**Feature Extraction and Selection:-**

PCA was applied to reduce the total number of features.

For each of the different classification, different features were used

1. Modality: Fpz alpha and beta power and Fpz beta band.
2. Arousal: Fpz beta/alpha power ratio.
3. Valence: F3/F4 alpha power, or Fpz beta and alpha band power.