IAA-02-IAA.9.2

INFORMATION THEORY APPLIED TO DOLPHIN WHISTLE VOCALIZATIONS WITH POSSIBLE APPLICATION TO SETI SIGNALS

Laurance R. Doyle, Brenda McCowan, and Sean F. Hanser

SETI Institute, 2035 Landings Drive, Mountain View, CA 94043 USA Fax: +1-650-962-9419 / Email: ldoyle@seti.org

Information theory allows a quantification of the complexity of a given signaling system. We are applying information theory to dolphin whistle vocalizations, humpback whale songs, squirrel monkey chuck calls, and several other animal communication systems' in order to develop a quantitative and objective way to compare inter species communication systems' complexity. Once signaling units have been correctly classified the communication system must obey certain statistical distributions in order to contain complexity whether it is human languages, dolphin whistle vocalizations, or even a system of communication signals received from an extraterrestrial source.