1046-94-274 **Le Gui*** (gule@math.uiowa.edu), 14 MacLean Hall, the University of Iowa, Iowa City, IA 52242-1419. *Can You Hear Me Now?* Preliminary report.

In real life when we store and transmit analog audio or video signals, we first obtain a digital representation of the signal. This process is called Digitization or Analog-to-Digital (A/D) conversion. It consists of two steps: sampling and quantization. In the "sampling" step, we restrict time to a discrete sample of the continuous times. In the "quantization" step, we discrete the real values of the time-discrete sample of the first step. We will discuss different quantization methods based on binary expansion or Beta-expansion and compare their "accuracy." "Accuracy" means that we can re-construct a good approximation of the original signal from its digitization. (Received August 25, 2008)