Massively Parallel Neural Encoding and Decoding of Visual Stimuli *
List of Supplementary Materials

Aurel A. Lazar, and Yiyin Zhou
Department of Electrical Engineering
Columbia University, New York, NY 10027

December 23, 2011

*The research reported here was supported by AFOSR under grant # FA9550-09-1-0350 and, in part, by a grant of computer time from the City University of New York High Performance Computing Center under NSF Grants CNS-0855217 and CNS-0958379.

The supplementary materials consists of a total of two videos.

1. **Supplementary video 1:**
   video1.mov: Reconstruction of the visual stimulus in Section 6.1. The original video is shown on the upper left corner, which was encoded by a Video TEM having neurons with deterministic thresholds. The reconstruction is shown on the upper right corner. The error and the 2D spectrum of the R component are shown on the bottom left and bottom right corners, respectively. The first 80ms of video were omitted since the recovery at the beginning of the video is based on an insufficient number of spikes.

2. **Supplementary video 2:**
   video2.mov: Reconstruction of the visual stimulus in Section 6.2. The original video is shown on the upper left corner, which was encoded by a Video TEM having neurons with random thresholds. The reconstruction is shown on the upper right corner. The error and the 2D spectrum of the R component are shown on the bottom left and bottom right corners, respectively. The first 80ms of video were omitted since the recovery at the beginning of the video is based on an insufficient number of spikes.