AUDIO SYSTEM FOR TECHNICAL READINGS

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The advent of electronic documents makes information available in more than its visual form —electronic information can now be display-independent. We describe a computing system, ASTER, that *audio formats* electronic documents to produce audio documents. ASTER can speak both literary texts and highly technical documents (presently in (LaTeX)TeX) that contain complex mathematics.

Visual communication is characterized by the eye's ability to actively access parts of a two-dimensional display. The reader is active, while the display is passive. This active-passive role is reversed by the temporal nature of oral communication: information flows actively past a passive listener. This prohibits multiple views — it is impossible to first obtain a high-level view and then "look" at details. These shortcomings become severe when presenting complex mathematics orally.

Audio formatting, which renders information structure in a manner attuned to an auditory display, overcomes these problems. ASTER is interactive, and the ability to browse information structure and obtain multiple views enables *active* listening.