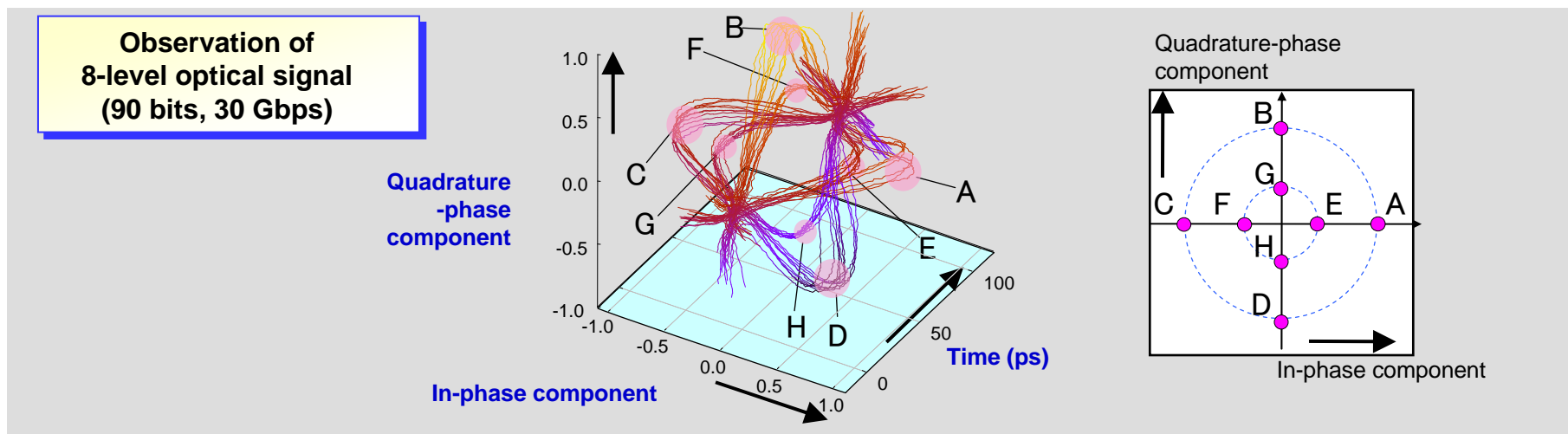


2005/9/27 Release <http://www.hitachi.com/New/cnews/050927.html>

3D Visualization of amplitude and phase of high-speed optical signals - Major progress in realizing next-generation optical communication networks -



The Central Research Laboratory of Hitachi, Ltd. (General Manager: Mr. Yasushi FUKUNAGA) announced the successful development of a three-dimensional (3D) visualization technique to observe the amplitude and phase of high-speed optical signals in optical fiber communications, for the first time in the world. New methods of transmitting information using the phase of light (optical phase) through optical phase modulation or multi-level modulation, are being considered for next generation optical fiber networks. In order to facilitate these developments, however, it is necessary to be able to observe a complete phase modulated waveform to determine its quality, and thus initiate improvements. Optical phase (time delay of the optical wave) however was “invisible” to conventional instruments, preventing observation, and thus hindering significant progress. The 3D visualization technique developed will be a key to facilitating the development of large-capacity long-distance next-generation optical transmission technology for application in optical networks.