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Properties of 16 sunspots observed with Hinode Solar Optical Telescope

Debi Prasad Choudhary

*Department of Physics and Astronomy, California State University Northridge,
18111 Nordhoff Street Northridge, CA 91330-8229*

Gordon MacDonald

*Department of Physics and Astronomy, California State University Northridge,
18111 Nordhoff Street Northridge, CA 91330-8229*

Toshifumi Shimizu

*Institute of Space and Astronautical Science, Japan Aerospace Exploration
Agency (ISAS/JAXA), 3-1-1 Yoshinodai, Sagami-hara, Kanagawa 229-8510,
Japan*

Abstract. We have studied 16 sunspots with different sizes and shapes using the Hinode Solar Optical Telescope. The ratio of intensity in G-band and CaII H images reveal rich structures both within the umbra and penumbra of most spots. The most striking features are the compact blob at the foot point of the umbral side of the penumbral fibrils. The ratio increases three to four times around the middle of the penumbra. The magnetograms show a sudden change of direction at these locations. Compared to the umbral foot points, the ratio at the quiet sun side of the penumbral fibrils are about 4 to 7 times higher. In this paper, we shall present detailed properties of these features using the spectropolarimetry and images in G-band, CaII and blue filters. We shall discuss the results using the contemporary models of the sunspots.