ABSTRACT

The work exploits neural networks and hyperspectral data for vegetation analysis. The area located in alpine region (South Tyrol-Northern Italy) was the selected test site for the study. Hyperspectral data provided by the Hyperion and CHRIS platforms and concurrent extended ground-truth were available for this area which is particularly suitable for its biodiversity, in fact many different vegetation types are present in intimate association, such as various types of conifers and beech trees. The obtained results show a good overall capability of discrimination between different vegetation types. The results also highlight that the use of a dimensionality reduction technique based on autoassociative neural networks permits to retain most of the original information, helping the final classification algorithm to avoid the so-called *curse of dimensionality*.