# Applications of Stereovision in precision Agriculture

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## ABSTRACT

With increasing in world population to over 10 billion, by the year 2050, growth in agricultural output needs to be continued. On the other hand use of chemical fertilizer, herbicides and pesticides for high performance in crop production in recent years made many issues such as environment pollution, decreasing in product quality and increasing in costs. Therefore, considering this, variable rate technology and autonomous vehicles application in precision agriculture is one of the main issues to be regarded noteworthy toimprove the efficiency. As most crops are cultivated in rows, animportant step towards this long-term goal is the development of a row-recognition system,which will allow a robot to accurately follow a row of plants.This research aimed to explain a field sensing system capable of performing threedimensional (3D) field mapping for measuring crop height and volume and detecting croprows in 3D for reliable tractor guidance using one tractor-mounted stereo-camera.

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