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*minifloet irrigation controller  
presentation of differential valve*

## Book of Abstracts



## ATMODRIPPER SYSTEM FOR PRECISION PLANT IRRIGATION

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Atmodripper is a trickle irrigation system in which the water out-flow is controlled by an air influx. This system enables real time adjustments of the water out-flow and make drippers less susceptible to clogging, because water flows through tubes with an internal diameter between 3 and 5 mm. The atmodripper can be used to deliver very small water fluxes, below 5 mL/h, needed to irrigate pots with hydrophobic substrate, to high fluxes, above 1.0 L/h, frequently needed for soil applications. The system can be assembled in two ways: a) linear unities to irrigate field crops; and b) radial (bubbler) unities to irrigate plant pots in domestic and greenhouse environments. In both conditions the water out-flow can be controlled by: a) air flow control – the water flow increases linearly between zero and 1.0 L/h and non linearly between 1.0 and about 3.0 L/h; and b) water pressure control –for a constant air flux the water flow increases according a relative height between the air inlet and the dripping outlet tube level. By conveying air with water this system enables complementary actions: a) improvement of the soil aeration; and b) the actuation of Irrigas<sup>®</sup> sensors through special air driven valves and irrigation controllers that allow water flow only when the soil water tension is greater than the reference value of such sensors. If a sensor/controller is coupled to each dripper the irrigation can be performed to attend the water requirement of each plant/pot. Consequently, the atmodripper is a new tool for precision irrigation and fertigation of fruits, ornamentals, vegetables, and seedlings in open fields, greenhouse, and domestic environment.

Keywords: atmodripper, dripper, Irrigas<sup>®</sup>, irrigation scheduling, precision irrigation.