

Technology Offer

SARI: Sectioning and Assessment of Remote Images for Precision Agriculture

A research group of the Institute for Sustainable Agriculture (CSIC, Cordoba, Spain) has developed a procedure to spatially assess annual/ herbaceous crops key crop characteristics from remotely sensed imagery. So that, operations such as the variable rates application of fertilizers, herbicides and others can be assessed delineating an input precision map. A software so-called SARI was developed to automatically achieved SARI procedure.

The software SARI interpret (“read”) remote image by grouping/ clustering pixels of different size/ dimensions, conforming “region of interest” (ROI). SARI splits remote images into reduced rectangular size “micro-images”, and integrates (“weight”) the band values of each micro-image automatically. SARI is written in IDL and works as an add-on to ENVI. The micro-plot length and height is arbitrarily defined as multiple of the image spatial resolution. SARI software and installation guide are available in this repository. Examples of SARI functioning over real weed infestations captured in remote images and of implementation of bio-economic models are shown in articles 1 and 2.

1. Software registration: García-Torres L, Peña-Barragán JM., Caballero-Novella JJ., López-Granados F, & Jurado-Expósito M. (2008a). SARI® Software, Splitting and Assessment of Remote Images, Office for the Registration of Intellectual Property, Regional Department of Culture, Seville, Spain, No. 200899900226820, pp. 39 (in Spanish). Owner: IAS/ CSIC.

2. Patents: García-Torres Luis; Peña-Barragán JM; Caballero-Novelda JJ; Jurado-Expósito M; & López-Granados F. Automatic procedure to section remote images and to characterize agri-environmental indicators, Spanish Office for Patents and Trademarks, Madrid, 24 June 2009, PCTES2009/070247, pp. 48, in Spanish. P200801932, 08 June 2008; PCT PCT/ES2009/070247; publication: 2 332 567; owner: IAS/ CSIC.

3. Articles

García Torres; David Gómez Candón; Francisca López Granados; Juan José Caballero Novella; Alfonso García Ferrer; José Manuel Peña Barragán; Montserrat Jurado Expósito. Sectioning remote imagery for characterization of Avena sterilis infestations. Part A: Weed abundance. Precision Agriculture. 2012, 13 - 3, 322 - 336. DOI 10.1007/s11119-011-9249-y; <http://link.springer.com/article/10.1007/s11119-011-9249-y>
Gómez Candón D; López Granados F; Caballero Novella, JJ; García Ferrer A; Peña Barragán JM; Jurado Expósito M.; & L. García Torres. Sectioning remote imagery for characterization of Avena sterilis infestations. Part B: Efficiency and economics of control. Precision Agriculture, 2012, 13, 3, 337 - 350. DOI 10.1007/s11119-011-9250-5; <http://link.springer.com/article/10.1007/s11119-011-9250-5>

The owner of SARI software and SARI patent is the Spanish Council of Scientific Research (CSIC). The Technology Transfer Office of this organism (www.csic.es/vatc) allows using freely both only for research and academic purposes, requiring that its authorship should be mentioned with bold characters. Further contact: Alfonso Díaz-Morale: alfonso.diaz@eez.csic.es; or lgarciatorres@ias.csic.es; luisgt2015@hotmail.es;