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To date, the only acceptable therapeutic approach for celiac disease (CD) is a strict elimination from the diet of gluten-containing foods, but this diet does not always guarantee an adequate nutritional intake. Pseudocereals are receiving considerable attention as interesting alternatives for the formulation of gluten-free products, an quinoa grains arise as nutritive substitutes of conventional cereals. The aim of this was the characterization of different quinoa samples corresponding to 11 quinoa va using polyacrylamide gel electrophoresis in the presence of sodium dodecyl sulfate PAGE) and immunoblotting techniques to assess their suitability for celiac subject of these varieties were grown in Italy to assess if the reproduction in a new habitat guarantee the retention of the "safe" protein pattern. None of the quinoa varieties s presented protein bands with electrophoretic mobility comparable with those of wi gliadins, the toxic protein for celiac subjects. All the quinoa samples showed a low affinity for both specific anti-gliadin antibodies and IgAs from celiac subjects, conf that quinoa can be considered as a safe ingredient for celiac patients. However, rel varieties should be previously selected since the immuno cross-reactivity with anti antibodies can vary significantly.

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Biochemical and Immunochemical Evidences Supporting the Inclusion of Quinoa (*Chenopodium quinoa* Willd.) as a Gluten-free Ingredient (5)

(6) Authors | Authors and affiliations

Elena Peñas, Francesca Uberti, Chiara di Lorenzo, Cinzia Ballabio, Andrea Brandolini, Patrizia Restani

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To date, the only acceptable therapeutic approach for celiac disease (CD) is a strict elimination from the diet of gluten-containing foods, but this diet does not always guarantee an adequate nutritional intake. Pseudocereals are receiving considerable attention as interesting alternatives for the formulation of gluten-free products, and quinoa grains arise as nutritive substitutes of conventional cereals. The aim of this study was the characterization of different quinoa samples corresponding to 11 quinoa varieties, using polyacrylamide gel electrophoresis in the presence of sodium dodecyl sulfate (SDS-PAGE) and immunoblotting techniques to assess their suitability for celiac subjects. Some of these varieties were grown in Italy to assess if the reproduction in a new habitat can guarantee the retention of the "safe" protein pattern. None of the quinoa varieties studied presented protein bands with electrophoretic mobility comparable with those of wheat gliadins, the toxic protein for celiac subjects. All the quinoa samples showed a low binding affinity for both specific anti-gliadin antibodies and IgAs from celiac subjects, confirming that quinoa can be considered as a safe ingredient for celiac patients. However, reliable varieties should be previously selected since the immuno cross-reactivity

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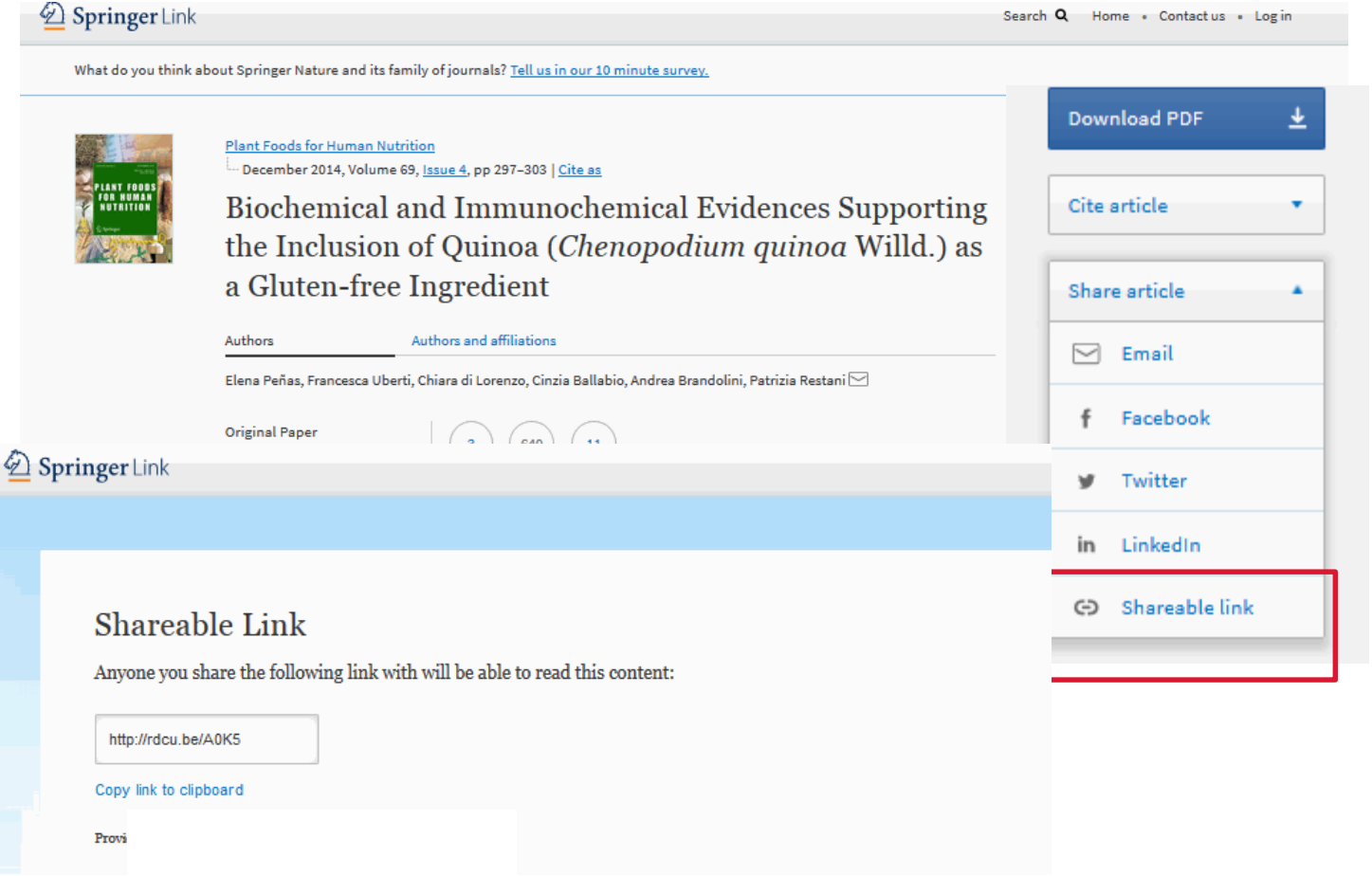

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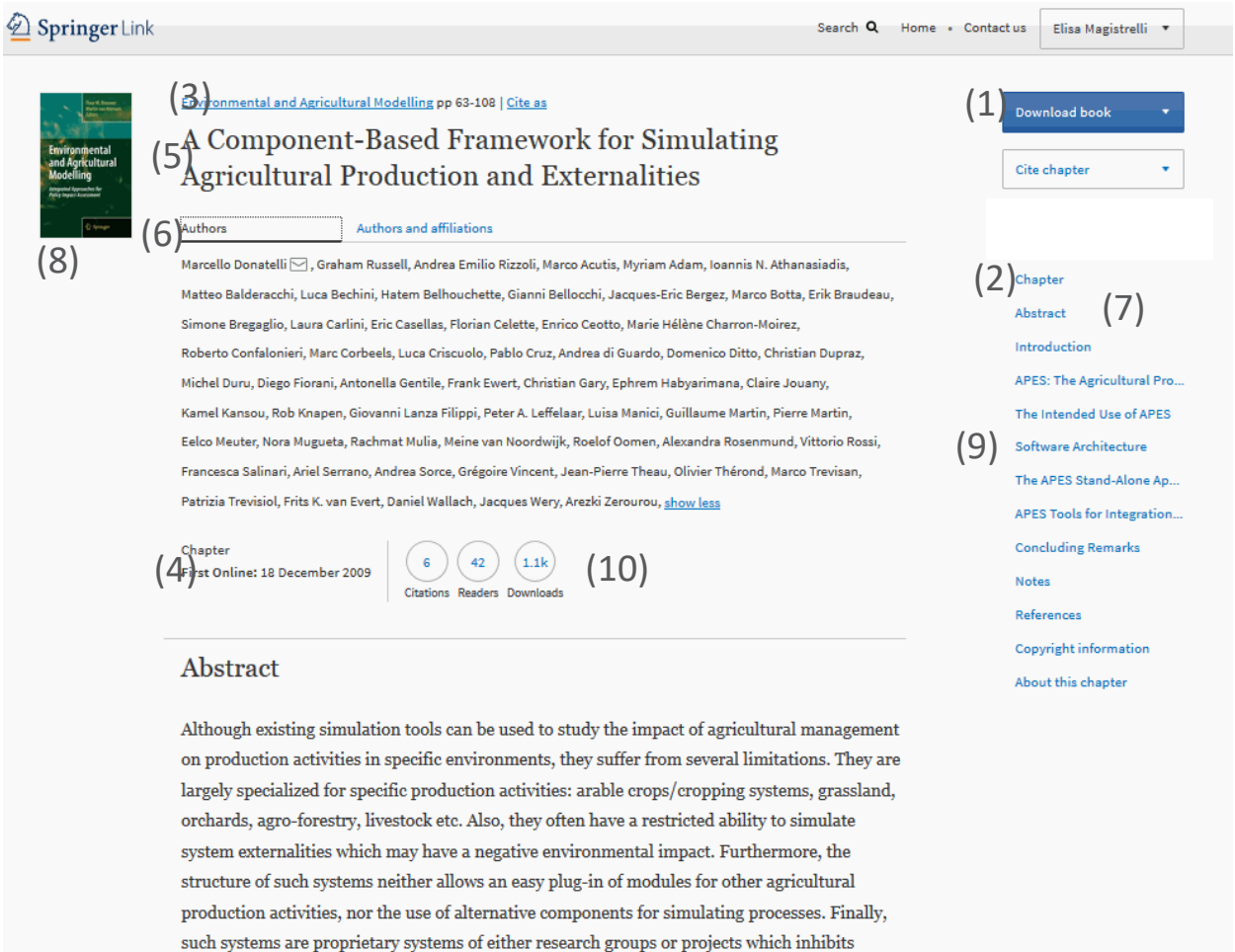

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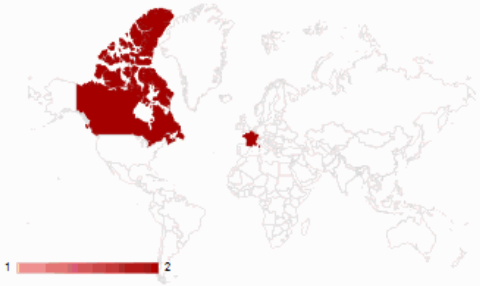

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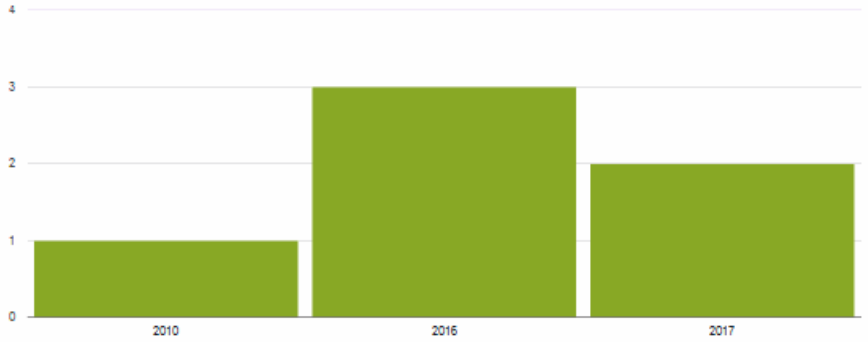

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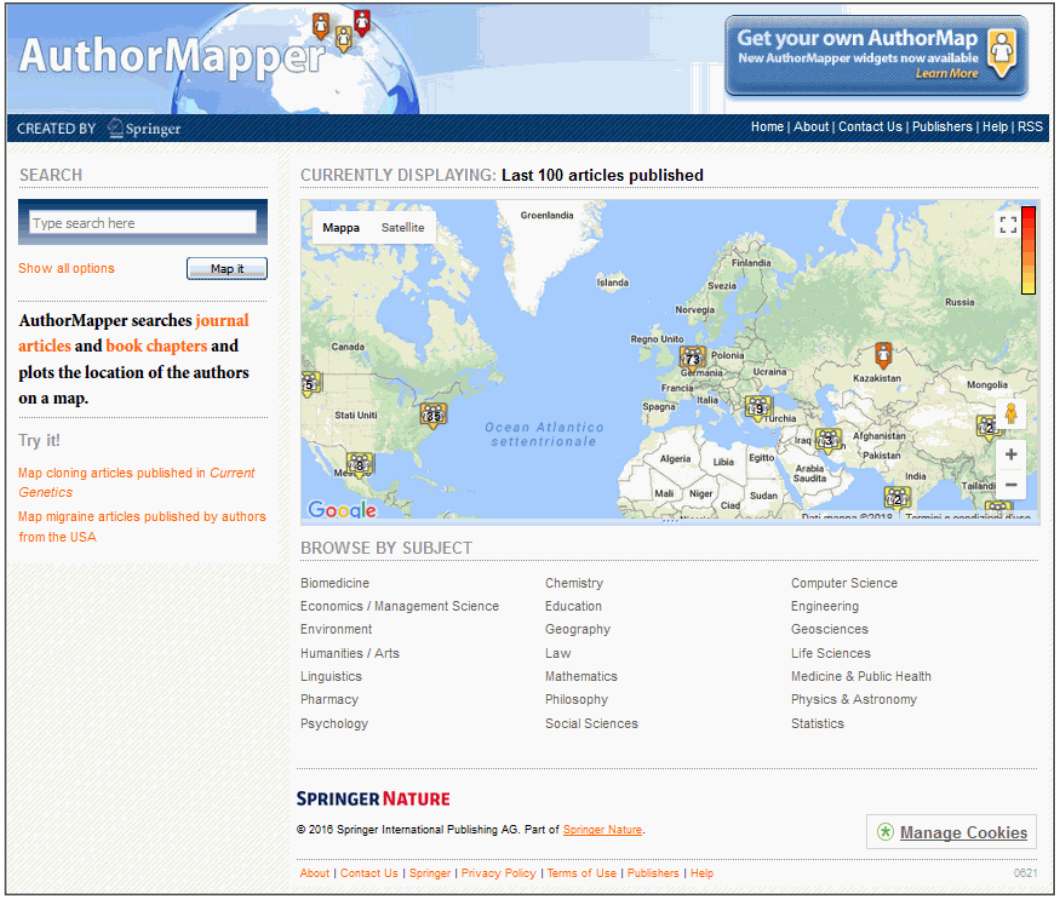

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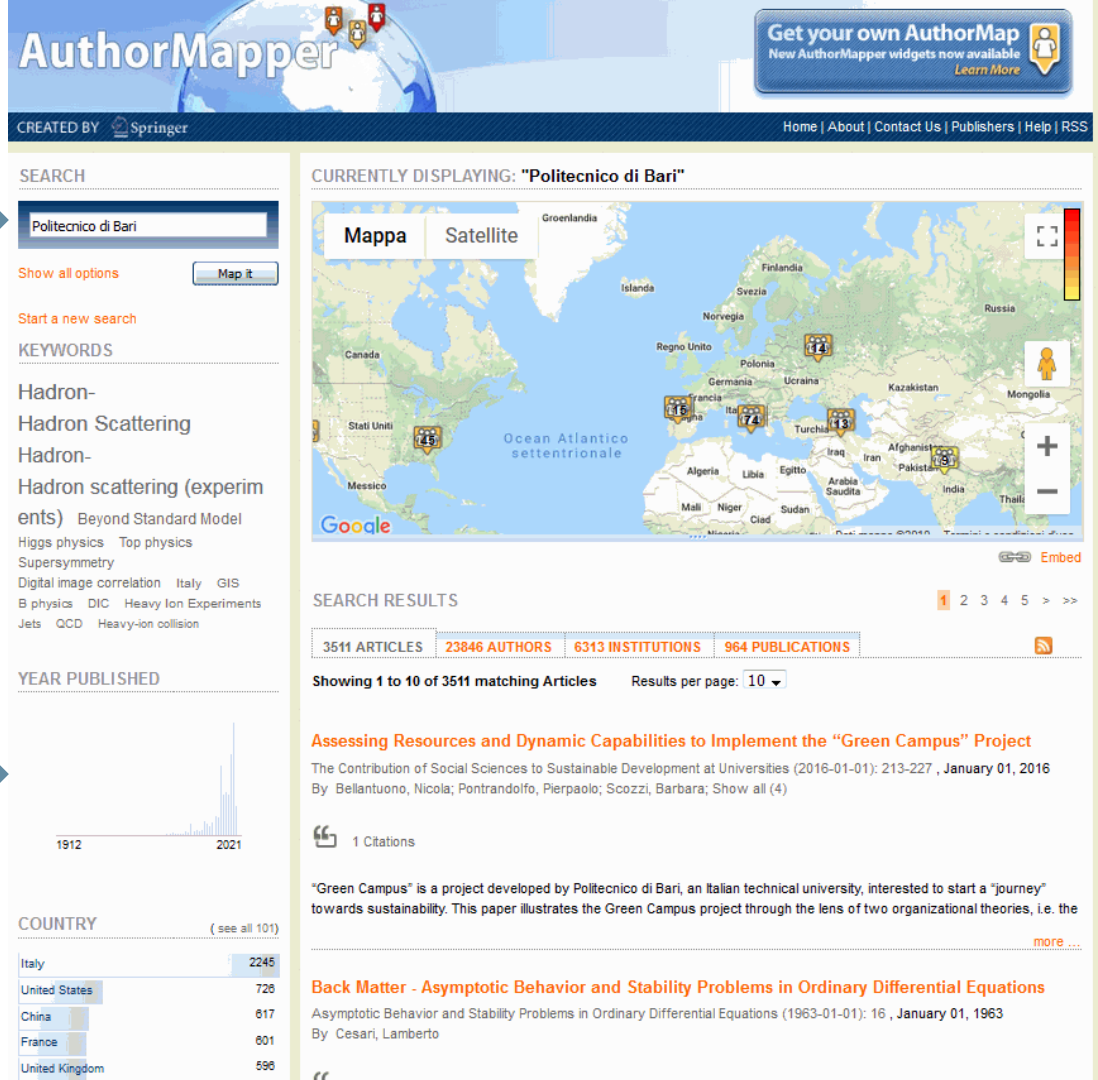

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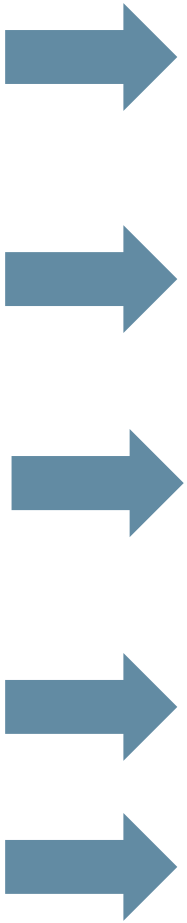

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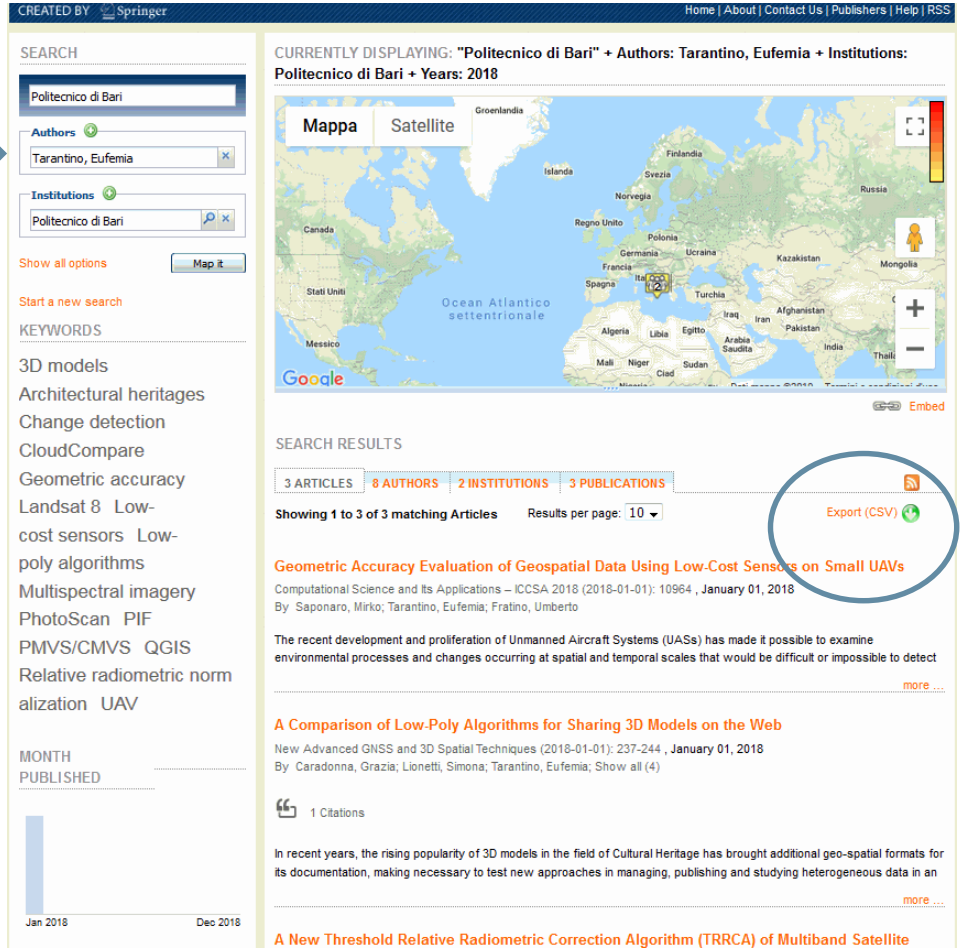

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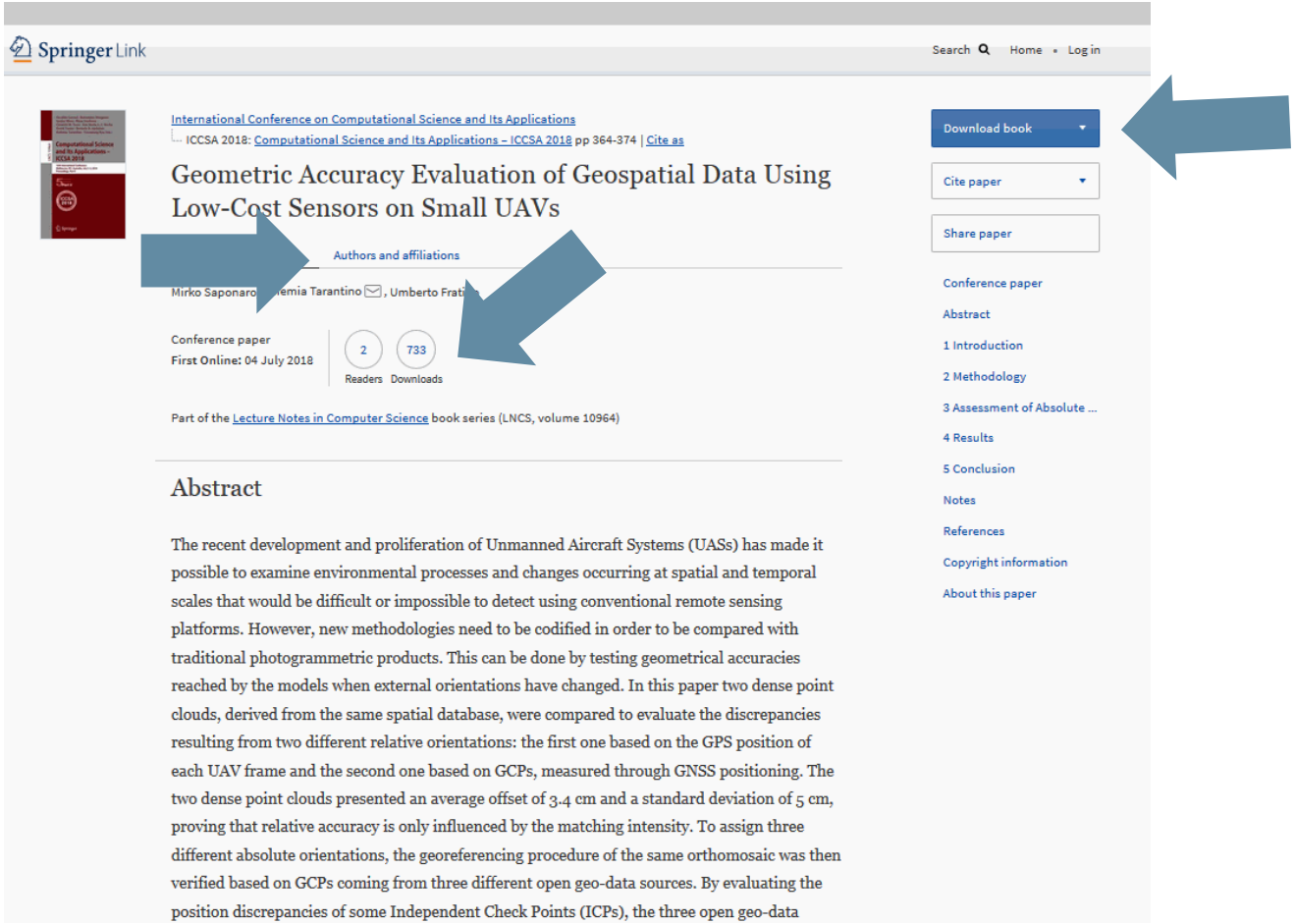

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