Short memory sabbatical request Carlos J. Melian

1. Title: **Deep process-based learning networks in Biodiversity research**
2. Duration of the sabbatical: **6 months**
3. Requested date: **January 1 to June 30, 2020**
4. Host:

Institute for Cross-Disciplinary Physics and Complex Systems
https : //if isc.uib − csic.es/en/
Mallorca, Spain.

5. Please find attached the Invitation letter of the host institution.
6. Summary supervisory responsabilities during my absence from January 1 to June 30, 2020.

I will host at Eawag *Dr. Francisco Baldo* as a visiting researcher (Salvador de Madariaga grant) from March 1 to August 31, 2020. Dr. Francisco Baldo will be visiting me two times during my sabbatical in Mallorca. The visits will be in the starting and medium phase of his short visit: This is one week in March and the second visit in June. We will be working together at Eawag during the last phase of his research visit, July and August 2020.

I have pending grants with expecting starting date the first part of 2020. The following is the list of grants and the plan of supervisory responsabilities during my absence at Eawag if funded.

Brazilian-SNSF Joint Research Programme (full proposal submitted)
Dr. Cecilia Andreazzi is the proposed candidate to be the postdoctoral researcher of this project. She will start March 2020 for a duration of 24 months. We agreed she will be the first 4 months during her postdoc working together with the Brazilian team (March 1 to June 30, 2020).

Swiss Data Science Center (full proposal to be submitted by September 30, 2019)
The research will be developed by a data scientist hosted by the SDSC during the first part of the proposal (First semester 2020). I will be in Switzerland from July 2020 to co-supervise the researcher from the second part of 2020 until the end of the proposal, December 2021.

Spark SNSF
FishEc has written at least three host letters for postdoctoral researchers under the Spark SNSF funding scheme. The "Sparks" will work in their own ideas meaning that they will need much less supervision than PhD or postdocs joining a PI driven project. I am involved in these three applications: *Dr. Leonardo Aguirre* (starting date 1.11.2019), *Dr. Catalina Chaparro* (starting date 1.1.2020), and *Dr. Malena Sabatino* (starting date 1.11.2019). The projects by Dr. Aguirre and Chaparro are theoretical. We have made a plan of virtual conferences to discuss the implementation of the modeling during the first phase of the proposal (Winter 2019 and Spring 2020.) We also have shared git repositories to facilitate tracking the progress in coding, writing and literature analysis. Dr. Sabatino's proposal includes field work. We agreed she will realize the first part of the proposal collecting empirical data. We will be working together in Switzerland in the late Spring 2020.