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SEP.
2015

🕒 de 11h à 12h

SÉMINAIRE

Gathering, updating, and calibrating phylogenies for The Open Tree of Life

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The Open Tree of Life project is a collaborative effort to synthesize, share, and update a comprehensive phylogeny of all 2.3 million named species. We have completed a draft synthesis of a single tree from hundreds of phylogenetic estimates using taxonomy as a scaffold. This synthesis is not static but rather will be continually revised as new data become available. This undertaking requires development of both novel infrastructure and analysis tools. I will discuss three components of this project: Phylesystem, an open database and web application for community curation of phylogenies using a git-based datastore, PhyScraper, a pipeline to continually update phylogenetic estimates as new data is generated, and FastDate, an algorithm to rapidly generate maximum a posteriori estimates of time-calibrated trees, even for phylogenies with hundreds or thousands of tips. Together, these developments reduce impediments to accessing, analyzing and reusing the phylogenetic information which is essential to biological research today.