

ClimEx – Final Symposium – 7 May 2019 Parallel Workshops	
Session A	Potential of large ensemble (LE) to advance climate science
Key Questions	<ul style="list-style-type: none"> • What are the knowledge gaps in terms of physical processes, assessing and communicating uncertainties, and new analysis techniques, large ensemble can address? • What are the roles of single model LE in the ensemble model ‘ecosystem’? • Can (and how) LE help connect climate and impact model for specific issues? • How can we plan, coordinate, and manage the production of LE?
Key Findings	<ul style="list-style-type: none"> • Main findings: <ul style="list-style-type: none"> ○ Many (still unexplored) potentials of LE to advance climate science (machine learning, detection of weather patterns, compound events, exploration of relationships between climatic variables) ○ Necessity to start collaboration between LE modelling communities (RCM, GCM, attribution) ○ Identification of the issues relevant to the engineering community in order to use LE can be useful to this community and, more generally, to the impact and adaptation community • Implications and research needs : <ul style="list-style-type: none"> ○ Need for a review/perspective paper on RCM-LE (advantages, constraints, comparison of available LE, LE applications, purposes, gaps) ○ Some mechanism or organization (example from the attribution community could be useful) should be put in place to coordinate the effort of the RCM-LE community and to make bridges with the GCM-LE community ○ More research (and eventually publication) about basics indices specifically tailored for adaptation and engineering needs ○ Future works should look at sensitivity analysis (e.g., land use changes, vegetation, aerosols) using multi-model ensemble of ‘medium size’)