Data and code descriptions

The input data includes precipitation and temperature data. The data consists of simulations from GCMs and observation. The data descriptions and sources are listed in table 1.

The spatiotemporally distributed downscaling model includes three parts: (1) Up-sampling GCMs simulations, (2) Constructing relations between the GCMs simulations and local observations, (3) Correcting the GCMs simulations. The code of the three parts for precipitations and temperatures are list in table2. As the observations from National Meteorological Information Center (http://data.cma.cn/) is required not to be shared. So the data is not provided.

Table 1. Data descriptions. The pcp presents the precipitation while the tm presents the temperature.

Data Classifications	Simulations from MRI-CGCMs		Observations
	Historical Data	Future Data	
Time	1961-2005	2006-2100	1961-2005
Data Files	PcpSimulation1961_2005 folder, TmSimulation1961_2005 folder	PcpSimulation2006_2100 folder, TmSimulation2006_2010 folder	PcpObs folder, TmObs folder
Data Sources	https://esgf-node.llnl.gov/search/cmip5/		http://data.cma.cn/

Table 2. The codes for different procedures.

Procedures	Code Sources
Part 1	part1_code folder
Part 2	part1_code folder
Part 3	part2_code folder