Obtaining equation of state or elasticity from first principles (FP) at finite temperatures is a time consuming procedure that involves hundreds of job submissions and runs. Results from some runs must be used as parameters in the subsequent ones. Input preparation from run to run is usually made by the user. However, data manipulation between runs are well defined and decisions to be made during execution of the workflow are also easily predictable. This permits these workflows to be programmed and scheduled for automatic execution.

We designed an algorithm necessary to run automatically workflows for equation of state computation. Human involvement is restricted to the elaboration of a single initial input, which is not much more complex than the typical input for a single execution of an FP code. The present implementation makes extensive use of awk, shell scripting, and auxiliary C programs. The usual workflow was restructured to achieve high degree of parallelism and is well suited for implementation in distributed environments.