

# Status of vHLLE+UrQMD interface software

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# vHLLE+UrQMD interface software

## How to get?

1. `git clone https://github.com/pbatyuk/vHLLE_package.git`
2. `git checkout 1.1.2`

## How to compile and use?

- `vHLLE_package/README.md` (very detailed description on how to ...)

## Aim of the project:

- To collect all components (model + interface) in one place.
- To start simulations locally or remotely in a common way.
- To avoid a huge messy in the start configure scripts.
- Possibility to use the model for its adjustment (pre-hydro + hydro phase) as planned.

## vHLLE+UrQMD interface software

### Main macro: vHLLE\_package/macro/vHLLE.C

```
void vHLLE() {
VHLL* gen = new VHLL();
gen->SetSourceROOT(""); // Set ROOT-environment if not set yet and necessary to be set
// gen->SetExtendedFileName(kTRUE); // Set use of extended output filename ...
gen->SetUseBatch(kFALSE); // False value (default) means calculations at your locale machine ...
gen->SetBatchCluster("ncx"); // Possible values are: ncx, govorun, basov and gsi

// Parameters below (6) are considered as those to be set obligatory
gen->SetPathToTheModel(""); // Absolute(!) path to the root folder of the model
gen->SetOutputDirectory(""); // Directory where output data stored
gen->SetEnergy(7.7); // Set collision energy [GeV], possible energies are 7.7 GeV ...
gen->SetImpact(0., 3.3); // Set impact range (min, max) [fm]
gen->SetEoS("XPT"); // Set EoS to be used (1PT - first order phase transition, XPT - crossover)
gen->SetNsamples(100); // nEvents to be sampled in hadronic cascade from one hydro-evolution

gen->SetParameters(); // Set parameters for urqmd, hydro and hadronic cascade given by ...

// Modifiers to redefine almost all parameters given by the author for urqmd, hydro ...
// See $VHLL/vhll.h to get more if needed
// N. B.: Redefinition, if needed, can be done after gen->SetParameters() called !!!
/*
gen->SetTau0(3.2);
gen->SetEtaS(0.2);
gen->SetRg(1.4);
gen->SetRgz(0.5);
gen->SetNsamples(100);
*/

gen->PrintBasicParams();
gen->CheckParamsValidity(); // It checks whether the params defined are consistent
gen->GenerateStartScript(); // It produces a script to be executed
delete gen;
}
```

## How to produce a simulation job?

- `root -b -q vHLLE.C // Execute ROOT-macro to produce a job script (all necessary params. are defined there)`
- `bash *.bash // Execute the job script (It supports some batch systems “from the box”, see README.md to get more information on)`