MD – Feb 2, 2021

1/ See datatools @ gitlab. It’s a very specific chunk of code for converting very specific csv files to netcdf in operations. The main thing you’ll want to use here is the “write\_netcdf” function in datatools.py for converting the historical Hope data to netcdf.  Calling example in bin/conv.py

2/ Example Hope data in mdunph/data/08MF005.nc , this spans 2011-2019, should be good for feeding runofftools to make the daily runoff files for 2016-2019 for our practice run.

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Note that need to install the developer version of runoff tools. Use the ssh install files as a guide and see the README.

## Installation with anaconda3 or miniconda3

1. Clone the repository:

```

git clone git@gitlab.com:FA12/runofftools.git runofftools

```

1. If you are installing for deployment / packaging:

```

cd runofftools && bash install.sh

```

If you are installing for development mode (editable code), use:

```

cd runofftools && bash install-dev.sh

```

1. To use the package, activate the `runofftools` environment:

```

conda activate runofftools

```

## Development strategy

1. This code will join OPP operations so we want to keep the complexity down and reliability up. Minimizing dependencies is a goal, with the exception of core scientific packages such as numpy, scipy, netCDF4, etc., that provide extensive functionality.
2. Target is Python 3 because Python 2 will be discontinued in Jan 2020. No effort made to ensure backwards-compatibity with Python 2.
3. Specific version of Python and dependencies will be decided at a later stage when the package is mature. We are developing under Python 3.7 and the "latest" version of dependencies.

## Code organization

1. The core functions are under `runofftools` and driver programs are stored under `bin`.

## Usage

Copy one of the example config files and modify as needed. Then the sequence is:

1. `python make\_runoff\_daily.py <config.yaml>`

Install-dev.ssh

#!/bin/bash

set -e

# This seems to be necessary

eval "$(conda shell.bash hook)"

# Install dependencies to new conda environment called `runofftools` and activate it:

conda env create -f runofftools.yaml

conda activate runofftools

# Install runofftools in editable mode

pip install --editable .