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The CDS Filter application is a command line tool which allows to apply a selection of filtering operations to CDS files as well as other functionality. The CDS filter tool is called in the following way:

CDSFilter [-o output_file] - [filter parameters] input_file

The following filter operations are currently supported:

- -c : cut a cds file into a smaller part where the first frame has the marker and the last frame has the marker . This function can be used to trim cds files that were recorded with the [Curvace Viewer](#)

- -e : extract the flow data stored in the input_file to a text file. Each line contains the x and y components of the optic flow vectors from a single frame.

- -r : remove the mean pixel bias from recorded sensor data. This function uses the mean brightness over the whole recorded sequence to estimate and remove the bias.

- -b v1 v2: apply a bandpass filter separately to each pixel of the given input_file. This method can be used for bias and noise removal. This method computes the difference of two signals L1 and L2, where L1 and L2 are the output from low-pass filtering the pixel value with the paramteres v1 and v2.

- -f config_file : compute optic flow from the given input_file using the configuration provided in the config_file. The output contains the input data together with the computed optic flow data in a new cds file. The config file must contain the following parameters. These define the area in which flow is computed, the size of the integration window ($2*PatchRadius+1$) and the filter parameter.

flowAreaBeginX 3

flowAreaBeginY 3

flowAreaSizeX 35

flowAreaSizeY 8

flowPatchRadius 1

flowFilterAlpha 0.004

- -v config_file : create an .svg vector graphic from the optic flow in a defined frame using the configuration given in the config_file.

- -o output_file : The output option is a special option which can precede any filter operation. The next filter operation will use the given output_file name instead of a predefined name.

Details about the optic flow computation and bias removal can be found in the [Algorithms section](#).