

# aggregate.Underwriter Cheat Sheet

The **Underwriter** call signature follows the corresponding DecL clauses, using prefixes for exposure (including limit sub-clause), severity, occurrence reinsurance, frequency, aggregate reinsurance, and note. `sev_xs`, `sev_ps` equal `dsev` outcomes and probabilities, and `(occ|agg)_reins` clauses are lists of (share, limit, attachment) triples.

`m` `Severity(name, exp_el=0, exp_premium=0, exp_lr=0, exp_en=0, exp_attachment=0, exp_limit=np.inf, sev_name='', sev_a=np.nan, sev_b=0, sev_mean=0, sev_cv=0, sev_loc=0, sev_scale=0, sev_xs=None, sev_ps=None, sev_wt=1, sev_conditional=True, occ_reins=None, occ_kind='', freq_name='', freq_a=0, freq_b=0, freq_zm=False, freq_p0=np.nan, agg_reins=None, agg_kind='', note='')`<sup>[0]</sup>

The following tables show all `m` methods, and fields or properties (used interchangeably). Comments elucidate the meaning of more obscure entries.

## 1. Specification & creation

*None*

## 2. Update

`knowledge`, `lexer`, `log2`, `parser`,  
`m` `read_database`, `m` `read_databases`,  
`m` `safe_lookup`, `update`, `m` `write`,  
`m` `write_from_file`,

## 3. Moments

*None*

## 4. Statistical functions

*None*

## 5. Validation

`m` `interpret_program`, `m` `interpreter_file`,  
`m` `interpreter_line`, `m` `interpreter_list`,  
`m` `interpreter_test_suite`, `m` `test_suite`,

## 6. Output dataframes

*None*

## 7. Reinsurance

*None*

## 8. Visualization

*None*

## 9. Risk and pricing

*None*

## 10. Approximations

*None*

## 11. Meta

`m` `build`, `case_dir`, `databases`, `debug`,  
`default_dir`, `m` `dir`, `m` `factory`,  
`m` `logger_level`, `m` `more`, `name`, `m` `qlist`,  
`m` `qshow`, `m` `show`, `site_dir`, `template_dir`,  
`test_suite_file`, `version`,

## Notes:

[0]: Arguments `sev_pick_attachments=None`,  
`sev_pick_losses=None`, omitted; see help.

[1]: matches `Portfolio`

Any vectorizable input accepts numeric or iterable datatypes.

Abbreviations: `gcn`=gross (subject), `ceded`, and `net`;  
`stats`: `m`=mean, `cv`=coefficient of variation, `sd`=standard deviation, `var`=variance, `skew(ness)`; `VaR`=value-at-risk