Introduction to **actuar**

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1 Introduction

Package **actuar** (Dutang et al., 2008) provides additional actuarial science functionality to the R statistical system. Although various packages on the Comprehensive R Archive Network (CRAN) provide functions useful to actuaries, **actuar** aims to serve as a central location for more specifically actuarial functions and data sets. The project was officially launched in 2005 and is under active development.

The current feature set of the package can be split into five main categories: additional probability distributions; loss distributions modeling; risk and ruin theory; simulation of compound hierarchical models; credibility theory.

As much as possible, the developers have tried to keep the "user interface" of the various functions of the package consistent. Moreover, the package follows the general R philosophy of working with model objects. This means that instead of merely returning, say, a vector of probabilities, many functions will return an object containing, among other things, the said probabilities. The object can then be manipulated at one's will using various extraction, summary or plotting functions.

2 Documentation

It is a requirement of the R packaging system that every function and data set in a package has a help page. The **actuar** package follows this requirement strictly. In addition to the help pages, the package includes vignettes and demonstration scripts; run the following commands at the R prompt to obtain the list of each.

```
\begin{Sinput}
> vignette(package = "actuar")
> demo(package = "actuar")
\end{Sinput}
```

3   Collaboration and citation

Obviously, the package leaves many other fields of Actuarial Science untouched. For this situation to change, we hope that experts in their field will join their efforts to ours and contribute code to the **actuar** project. The project will continue to grow and to improve by and for the community of developers and users.

If you use R or **actuar** for actuarial analysis, please cite the software in publications. For information on how to cite the software, use:

```
\begin{Sinput}
> citation()
> citation("actuar")
\end{Sinput}
```

Acknowledgments

References

C Dutang, V. Goulet, and M. Pigeon. **actuar**: An R package for actuarial science. *Journal of Statistical Software*, 25(7), 2008. URL http://www.actuar-project.org.