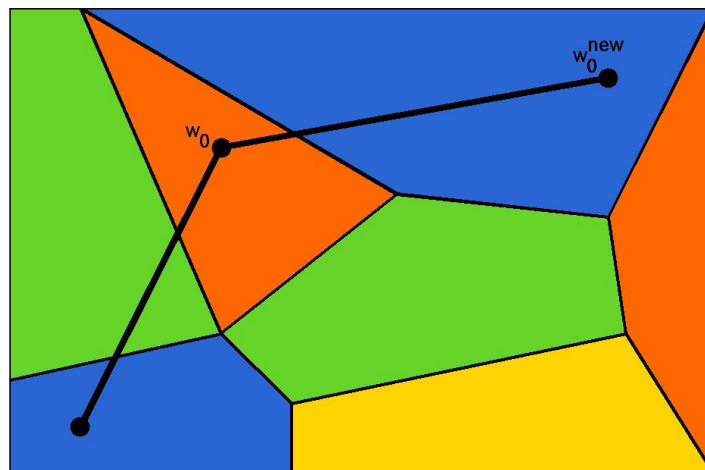


Additional Notes on qpOASES_e 3.1 (April 2017)

(a plain C, static memory translation of qpOASES 3.1)



Hans Joachim Ferreau et al.^{1,2}

ABB Corporate Research, Switzerland

support@qpOASES.org

¹past and present qpOASES developers and contributors in alphabetical order: Eckhard Arnold, Hans Georg Bock, Alexander Buchner, Holger Diedam, Moritz Diehl, Hans Joachim Ferreau, Joris Gillis, Boris Houska, Dennis Janka, Christian Kirches, Manuel Kudruss, D. Kwame Minde Kufoalor, Aude Perrin, Andreas Potschka, Milan Vukov, Andreas Waechter, Sebastian F. Walter, Thomas Wiese, Leonard Wirsching

²qpOASES has been initially released and developed at KU Leuven within the Optimization in Engineering Center (OPTEC), while current development is mainly supported by researchers at the Interdisciplinary Center for Scientific Computing (IWR) at Heidelberg University.

General Remarks

- This is an almost complete plain C, static memory translation of qpOASES 3.1 from February 2015. It might be further maintained in the future.
- This translation aims at providing most of the functionality of qpOASES 3.1; see its manual located at `<install-dir>/doc/manual.pdf` for further information.
- The translation process made necessary several adaptations of the calling syntax of all provided functions. In particular,
 - modified constructor/destructor calls for `QProblem(B)` or `Options` objects,
 - addition of the prefix `"QProblem(B)_"` to all former member functions,
 - addition of a pointer to the corresponding `QProblem(B)` object as first argument to all former member functions,
 - replacement of references by pointers (relevant for the argument `"int* nWSR"` within the `init` and `hotstart` functions),
 - addition of the prefix `"qpOASES_"` to all global constants and utility functions.

Besides the modified calling syntax, purpose and effect of these functions remain the same.

- `SQProblem` objects are not yet supported.
- Parts of the `MATLAB` and `SIMULINK` interfaces have also been transformed to plain C, but no `SCILAB`, `OCTAVE` or `PYTHON` interface is provided.
- The folder `<install-dir>/examples` contains simple examples to illustrate the usage of the new syntax. Moreover, examples for using the `MATLAB` and `SIMULINK` interfaces can be found within `<install-dir>/interfaces/matlab` and `<install-dir>/interfaces/simulink`, respectively.
- If you think the translated code is ugly, you are right. It is rather a quick and dirty translation of the existing C++ version than a tidy plain C design.
- If you have further questions concerning qpOASES_e 3.1, contact its main author: Hans Joachim Ferreau, support@qpOASES.org.

Known Issues

- All parts of the code need further testing.
- Code has not yet been optimized for speed or object code size. In particular, computation times of qpOASES_e 3.1 are up to a factor of two higher(!) than that of qpOASES 3.1.