1035-05-110   **Mikael Vejdemo-Johansson*** (`mik@math.uni-jena.de`), Math. Inst., Fak. f. Mathe. u. Info., FSU Jena, 07737 Jena, Germany. *Enumerating the Saneblidze-Umble diagonal in Haskell.*

In 2004, Saneblidze and Umble gave a construction of a diagonal on the permutahedron, thus providing important tools to several disciplines using the permutahedra and associated combinatorial polyhedra.

There has since been a few, mostly unpublished, attempts at writing computer programs to perform the highly combinatorial construction.

The author presents an implementation of the construction in the programming language Haskell: a language which allows one to write computer code that stays very close to the mathematical expression of the construction itself. The author wishes to emphasize the perceived naturality of translating mathematics into Haskell code by giving examples from this program. (Received July 25, 2007)