

Standard Owicki-Gries is unsound for weak memory

$$\begin{array}{c} \{a \neq 0\} \\ \{a \neq 0\} \\ x := 1; \\ \{x \neq 0\} \\ a := y \\ \{x \neq 0\} \\ \{a \neq 0 \vee b \neq 0\} \end{array} \parallel \begin{array}{c} \{a \neq 0\} \\ \{\top\} \\ y := 1; \\ \{y \neq 0\} \\ b := x \\ \{y \neq 0 \wedge (a \neq 0 \vee b = x)\} \end{array}$$

Ori Lahav and Viktor Vafeiadis. Owicki-Gries reasoning for weak memory models. In ICALP 2015, Track B. <http://plv.mpi-sws.org/ogra/>