**Proposal for C23**
**WG14 N2670**

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|---|---|
| **Title:** | zeros compare equal |
| **Author, affiliation:** | C FP group |
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| **Proposal category:** | Technical |
| **Reference:** | N2596 |

C does not explicitly say how floating-point +0 and -0 compare. Annex F adopts IEC 60559 by reference, so IEC 60559 5.11 "Comparisons shall ignore the sign of zero (so +0 = −0)" implicitly applies to implementations supporting Annex F. Also, it effectively applies wherever hardware conformant to IEC 60559 is used. The same specification has been in IEC 60559 since its first version.

Since the sign of zero is incidental in most computations, having zeros compare unequal would violate basic programmer assumptions. For example, `x == x + 0.0` would be false if `x` were -0.

The suggested change below adds the specification for all C implementations. This is a substantive change, but we know of no implementation that does otherwise.

**Suggested changes:**

In 6.5.8, at the end of #4, add:

> Positive zeros compare equal to negative zeros.

In 6.5.9 #5, after the first sentence, insert:

> Positive zeros compare equal to negative zeros.