# Erratum to:

*A Simple Derivation of the Hansen-Bliek-Rohn-Ning-Kearfott Enclosure for Linear Interval Equations (Reliable Computing 5 (2) (1999))*

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**Abstract.** In the INTLAB program for the interval enclosure of the solution set of linear systems of equations with interval data, published in the above-mentioned paper, one rounding is in the wrong direction. A simple change amends this bug.

As observed by Helmut Jarausch (private communication), a rigorous upper bound for $\beta_i$ in the formula (2.2) of the above paper, $\beta_i = u_i / d_i - |b_i|$, requires a lower bound on $d_i$. However, the program at the end of the paper provides only an upper bound (needed for $\alpha_i$). To correct this defect, replace the line

```
beta = u./d-abs(b);
```

in the program by

```
beta = u./dlow-abs(b);
```

where the lower bound `dlow` is computed by

```
dlow = v.*w'-diag(B); dlow = max(0,-dlow);
                        % rigorous lower bound for d
```

to be inserted directly before the line computing

```
B = B+v*w;
```

The work only changes by negligible $O(n)$ operations. The corrected algorithm is available as stage 2 in the INTLAB [2] (Version 3, December 22, 1999) routine `verifylss`.

## References

1. Neumaier, A.: A Simple Derivation of the Hansen-Bliek-Rohn-Ning-Kearfott Enclosure for Linear Interval Equations, *Reliable Computing* **5** (2) (1999), pp. 131–136.
2. Rump, S. M.: INTLAB—INTerval LABoratory, in: Csendes, T. (ed.), *Developments in Reliable Computing*, Kluwer, Dordrecht, 1999, pp. 77–104.