Correcting "Fuzzed" Values Created by Conversion Programs with SPSS[1]

The process of converting files from one format to another can sometimes result in errors. Sometimes these errors are big (numbers are completely different, and the N of cases changes), and sometimes they are small. One problem that occurs quite often is that a value will change slightly. For example, a value that was 14.12 will stored as 14.11999. This problem is often hard to detect because when printed, the value may appear (rounded) as 14.12. But, if you try to recode, select or match on these slightly different values, you will encounter problems.

Following is a program that demonstrates the problem, and shows how to round and truncate the value so that the extra values to the right of the decimal are eliminated. As you will see, the value is multiplied by 100, rounded, and then divided by 100. Depending on how many digits you want to the right of the decimal, you may choose a number different from 100.

```
** fuzzed .
DATA LIST list / id1 id2  .
BEGIN DATA .
14.11999 14.12
end data.
execute .

** Test to see if the values are the same.
compute sameval = 0 .
if id1 = id2 sameval = 1 .

*** without specifying a format, the problem does not even show up.
list var = all .

     ID1       ID2   SAMEVAL

   14.12     14.12       .00

** Specifying a format with several digits to the right of the decimal .
** allows the problem to be seen.
format id1 id2 (f8.5)   .
list var = all .

     ID1       ID2   SAMEVAL

14.11999 14.12000      .00

** The next line rounds to the second digit to the right of the decimal.
compute id1 = (rnd(id1*100) ) / 100 .

compute sameval = 0 .
if id1 = id2 sameval = 1 .
list var = all .

     ID1       ID2   SAMEVAL

14.12000 14.12000     1.00
```