

# Fold back distortion

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## notes

a simple fold-back distortion filter.  
if the signal exceeds the given threshold-level, it mirrors at the positive/negative threshold-border as long as the signal lies in the legal range (-threshold..+threshold).  
there is no range limit, so inputs doesn't need to be in -1..+1 scale.  
threshold should be >0  
depending on use (low thresholds) it makes sense to rescale the input to full amplitude

performs approximately the following code  
(just without the loop)

```
while (in>threshold || in<-threshold)
{
    // mirror at positive threshold
    if (in>threshold) in= threshold - (in-threshold);
    // mirror at negative threshold
    if (in<-threshold) in= -threshold + (-threshold-in);
}
```

## code

```
1  float foldback(float in, float threshold)
2  {
3      if (in>threshold || in<-threshold)
4      {
5          in= fabs(fabs(fmod(in - threshold, threshold*4)) - threshold*2) - threshold;
6      }
7      return in;
8  }
```