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Basic Quantization Scheme: Thresholding					

The most basic quantization technique is **Thresholding**:

Given a signal $\vec{x} = (x_i)$ and a single threshold σ , we replace values as follows:

$$q(x_i) = \begin{cases} 0 & \text{if } |x_i| \leq \sigma \\ x_i & \text{if } |x_i| > \sigma \end{cases}$$



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The thresholding quantization function:





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The IREC2000 Augustization Scheme						

The Lossy JPEG2000 Quantization Scheme also has one fixed parameter, τ . After wavelet transformation, a "step" quantization

$$q(x_i) = sgn(x_i) \cdot \sigma \cdot \left\lfloor \frac{|x_i|}{\sigma} \right\rfloor$$

is applied to each region with a parameter σ determined as follows:

$\frac{\tau}{2}$	τ
τ	2 τ



SQA

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The IREG2000 Augustization Scheme						

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$$q(x_i) = sgn(x_i) \cdot \sigma \cdot \left\lfloor \frac{|x_i|}{\sigma} \right\rfloor$$

is applied to each region with a parameter σ determined as follows:

$\frac{\frac{\tau}{4}}{\frac{\tau}{2}}$	$\frac{\tau}{2}$	τ
1	.	2τ



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$$q(x_i) = sgn(x_i) \cdot \sigma \cdot \left\lfloor \frac{|x_i|}{\sigma} \right\rfloor$$

is applied to each region with a parameter σ determined as follows:

$ \frac{\frac{\tau}{8} + \frac{\tau}{4}}{\frac{\tau}{2}} $ $ \frac{\tau}{2} $	$\frac{\tau}{2}$	τ
τ		2τ



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The quantization function for a given region:



