

Re: Dedekind Cuts, Fundamental Sequences: why?

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- *From:* Hatto von Aquitanien <abbot@xxxxxxxxxxxxxxxx>
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Dave Seaman wrote:

On Sat, 09 Jun 2007 01:34:05 -0400, Hatto von Aquitanien wrote:

"Cauchy's Criterion for Convergence. In accordance with Cantor's basic idea, real numbers can be described by convergent rational sequences. Two rational sequences (r_n) and (s_n) have the same (real) limit, if and only if the sequence of their differences $(r_n - s_n)$ converges to zero. It is natural therefore to define the real numbers as equivalence classes of convergent rational sequences; two sequences being equivalent when their difference sequence converges to zero. For this definition to be meaningful, the convergence of a sequence has to be characterized without making use of limits. This can be done with the help of Cauchy's criterion, which will be used to define the sequences concerned."

<http://www.amazon.com/Numbers-Graduate-Texts-Mathematics-Readings>