Unitary Symmetric Paths

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In this paper I describe unitary symmetric paths.

A unitary symmetric path of `f` by `g` is the inverse of `f`:

$$f[g] <=> f^{-1}$$

It follows that `g` is unique, because the inverse of `f` is unique.

Also, it follows that `$g^2$ <=> id` and this can be used to find the inverse unitary symmetric path:

$f <=> f$
$f[id] <=> f$
$f[g^2] <=> f$
$f[g][g] <=> f$
$f^{-1}[g] <=> f$

Some examples:

$id[id] <=> id$
$not[not] <=> not$
$inc_{\mathbb{Z}}[neg] <=> dec_{\mathbb{Z}}$
$(\cdot\ 2)\{(\neg= 0)\}[inv] <=> (/\ 2)\{(\neg= 0)\}$

The two last examples have inverse unitary symmetric paths:

$dec_{\mathbb{Z}}[neg] <=> inc_{\mathbb{Z}}$
$(/\ 2)\{(\neg= 0)\}[inv] <=> (\cdot\ 2)\{(\neg= 0)\}$