1 Patch properties

Darcs is built on a hierarchy of patch types. At the lowest level are "primitive" patches, and from these building blocks, a whole hierarchy of patch types are built. Each of these patch types must support a number of functions, which must obey a number of laws.

1.1 Properties of identity

Property 1 (Identity commutes trivially) *The identity patch must commute with any patch without modifying said patch.*

Property 2 (Inverse doesn't commute) *A patch and its inverse will always commute, unless that patch is an identity patch (or an identity-like patch that has no effect).*

1.2 Commute properties

Property 3 (Recommute) $AB \longleftrightarrow B'A'$ *if and only if* $B'A' \longleftrightarrow AB$

Property 4 (Commute inverses) $AB \longleftrightarrow B'A'$ *if and only if* $B^{-1}A^{-1} \longleftrightarrow A'^{-1}B'^{-1}$

Property 5 (Patch and inverse) *If* $AB \longleftrightarrow B'A'$ *then* $A^{-1}B' \longleftrightarrow BA'^{-1}$

This property is only true of primitive patches.

Property 6 (Permutivity) *(to be added...)*