

This note, that [was found here](#), as a part of [a collection](#) is written (completely with human hands) by [Rupadarshi Ray](#), was created on June 23, 2026 3:49:29 PM, was last modified on July 15, 2026 11:03:51 AM, and was exported on September 7, 2026 3:10:02 PM.

Subgroups of $O^+(1,n)(\mathbb{R})$

Definition. Types of subgroups of $O^+(1,n)(\mathbb{R})$

$G \leq O^+(1,n)(\mathbb{R})$ is of	if G
elliptic-type	has a finite orbit in $\mathbb{R}\boldsymbol{H}^n \iff$ fixes a point in the interior, $G \leq \text{Isom}(\mathbb{R}\boldsymbol{H}^n)_p$ for some $p \in \mathbb{R}\boldsymbol{H}^n$
parabolic-type	fixes a point in the boundary $G \leq \text{Isom}(\mathbb{R}\boldsymbol{H}^n)_\xi$ for some $\xi \in \partial\mathbb{R}\boldsymbol{H}^n$ and has no other finite orbit in $\overline{\mathbb{R}\boldsymbol{H}^n}$
hyperbolic-type	is not of <i>elliptic-type</i> or of <i>parabolic-type</i>
purely hyperbolic-type	every element $g \in G \setminus \{1_G\}$ is of <i>hyperbolic-type</i>

Current note has 1 direct children and 1 total descendants.

- stem
 - [O+ R1 n](#)
 - [Subgroups of \$O^+\(1,n\)\(\mathbb{R}\)\$](#)
 - [Limit set of subgroups](#)

And it has 2 siblings.

- stem
 - [O+ R1 n](#)
 - [Subgroups of \$O^+\(1,n\)\(\mathbb{R}\)\$](#)
 - [Discrete subgroups of \$O^+\(1,n\)_-\leftrightarrow\$ hyperbolic \$n\$ -manifolds/orbifolds](#)