

# Examples

## Example

Our old friend  $\mathbf{R}_K$  is Hausdorff, but not regular.

## Example

The space  $\mathbf{R}_\ell$ —the real line with the lower limit topology—is normal. However,  $\mathbf{R}_\ell \times \mathbf{R}_\ell$  is not normal.

# Good Stuff

## Theorem

*Every second countable regular space is normal.*

## Corollary

*Every second countable locally compact Hausdorff space is normal.*

## Corollary

*The countable product of second countable normal spaces is normal.*

## Theorem

*Every metrizable space is normal.*

## Theorem

*Every compact Hausdorff space is normal.*

## Theorem

*Every well-ordered space is normal in the order topology.*

## Example

Both  $S_\Omega$  and  $\bar{S}_\Omega$  are normal.