Map of the potential permafrost distribution in the French Alps

*Map of the potential permafrost distribution in the French Alps based on a statistico-empirical model computation*

**Input data:**
- Potential total solar radiation (PSIR) for the summer months (J-J-A), computed on a 50 m raster DEM (BDAlti, IGN), with ArcGIS 9.2 Solar Analyst
- Training set of geomorphological indicators of permafrost in the Combeynot area

**Model specifications:**
- Linear regression between PSIR and elevation of the front and the root of the landforms
- Boolean classification of the terrain surface

**Validation on two datasets of observed geomorphological indicators:**
- Vanoise Massif (Savoie)
- Tinée Valley (Alpes Maritimes)

**Topoclimatic conditions on the Combeynot Massif**

<table>
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<tr>
<th>Surface statistics:</th>
<th>1000</th>
<th>2000</th>
<th>3000</th>
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</thead>
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<tr>
<td>Z &gt; 2000</td>
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<td>1100</td>
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<tr>
<td>Zf 75% below 3000 m</td>
<td>77%</td>
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<tr>
<td>Zr 60% below 3000 m</td>
<td>60%</td>
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</tbody>
</table>

**Legend**
- Potential root area
- Potential front area
- Firns and glaciers (2000)
- Observed front of rockglaciers
- Observed root of rockglaciers

This work is part of the PermaNET project, funded by EU Alpine Space program.