

Climate Projection Data base for Roads – ClipDaR: Design a guideline for a transnational database of downscaled climate projection data for road impact models – within the Conference's of European Directors of Roads (CEDR) TRANSNATIONAL ROAD RESEARCH PROGRAMME

The European road sector is vulnerable to extreme weather phenomena, which can cause large socio-economic losses. Almost every year there occur several weather triggered events (like heavy precipitation, floods, landslides, high winds, snow and ice, heat or cold waves, etc.), that disrupt transportation, knock out power lines, cut off populated regions from the outside and so on. So, in order to avoid imbalances in the supply of vital goods to people as well as to prevent negative impacts on health and life of people travelling by car it is essential to know present and future threats to roads. Climate change might increase future threats to roads by altered severity and/or frequency. ClipDaR focuses on parts of the European road network and contributes, based on the current body of knowledge, to the establishment of guidelines helping to decide which methods and scenarios to apply for the estimation of future climate change based challenges in the field of road maintenance. Based on regional scale climate change projections specific road-impact models are applied in order to support protection measures.

In recent years, it has been recognised that it is essential to assess the uncertainty and reliability of given climate projections by using ensemble approaches and downscaling methods. A huge amount of scientific work has been done to evaluate these approaches with regard to reliability and usefulness for investigations on possible impacts of climate changes.

ClipDaR collects the existing approaches and methodologies in European countries, discusses their differences and – in close cooperation with the road owners – develops a common line on future applications of climate projection data to road impact models. As such, the project focuses on reviewing and assessing existing regional climate change projections regarding transnational highway transport needs. The final project report demonstrates how ClipDaR supports the decision processes of European national road administrations regarding possible future climate change impacts. ClipDaR closely cooperates with ROADAPT, which is also funded by the CEDR research programme.

ClipDaR guides decision-support regarding predictive maintenance. ClipDaR deals with road infrastructure, appendant technical requirements in force, meteorological threats and climate change.

GEFÄHRDETE INFRASTRUKTURELEMENTE

- Überbauten, Tragwerke
 - Tunnel
- Hänge, Böschungen
 - Fahrbahn
- Wasserleitungsbauten

vorauss. zu untersuchende Infrastrukturelemente:

- Brücken, - aufbauten, - fundamente
- Tunnel, Trogbauwerke
- Stützbauten, Hang- und Böschungssicherungen
- Fahrbahnoberflächen
- Streckenbegleitende Infrastruktur
- Be- und Entwässerungssysteme

REGIONALE KLIMAINFO, Szenarien

- VALUE - Validierung und Zusammenführung von Downscaling-Verfahren für die Klimaänderungsforschung, ESSEM COST Action ES1102



- reclip:century - Regionale Klimaprojektion



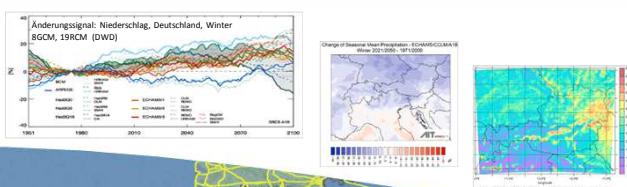
- Disturbance /StartClim – regionale Daten des gegenwärtigen Klimas für Österreich



- KLIWAS - Auswirkungen des Klimawandels auf Wasserstraßen und Schifffahrt – Entwicklung von Anpassungsoptionen



- CORDEX/Ensembles - A COordinated Regional climate Downscaling EXperiment



KLIMAPARAMETER, PHÄNOMENE

- Thermie
- Nässe
- Trockenheit
- Sturm
- Strahlung

vorauss. zu untersuchende Klimaparameter:

- besondere Tage: heiße Tage, Tropennächte, Hitzeperioden, Frosttage, Eistage
- Temperaturextrema, Tagesgang, Frost-Tau-Wechsel
- Niederschlagsextrawerte, - mittelwerte
- Trockenperioden
- Neuschneesumme, Schneedeckenhöhe
- Windgeschwindigkeitsmaxima, Sturmtage
- Sonnenscheindauer
- kombinierte Größen:
Starkregen nach Trockenperioden, Sturmtage bei Schneefall, Sturmtage bei Trockenperioden, etc.

