



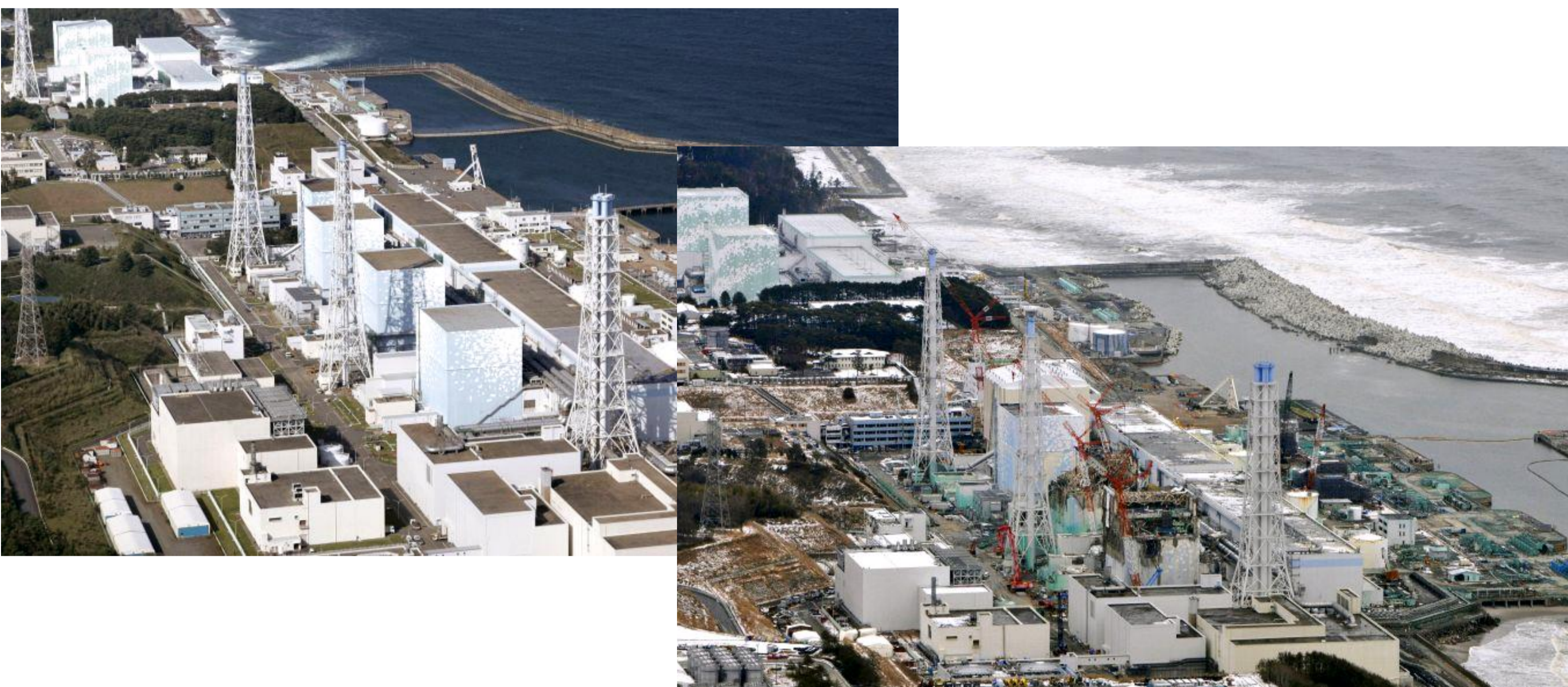
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Lessons learned from Fukushima

Computations with the Decision Support System RODOS



Graph 1 The NPP Fukushima Dai-ichi, before and roughly one year after the accident.

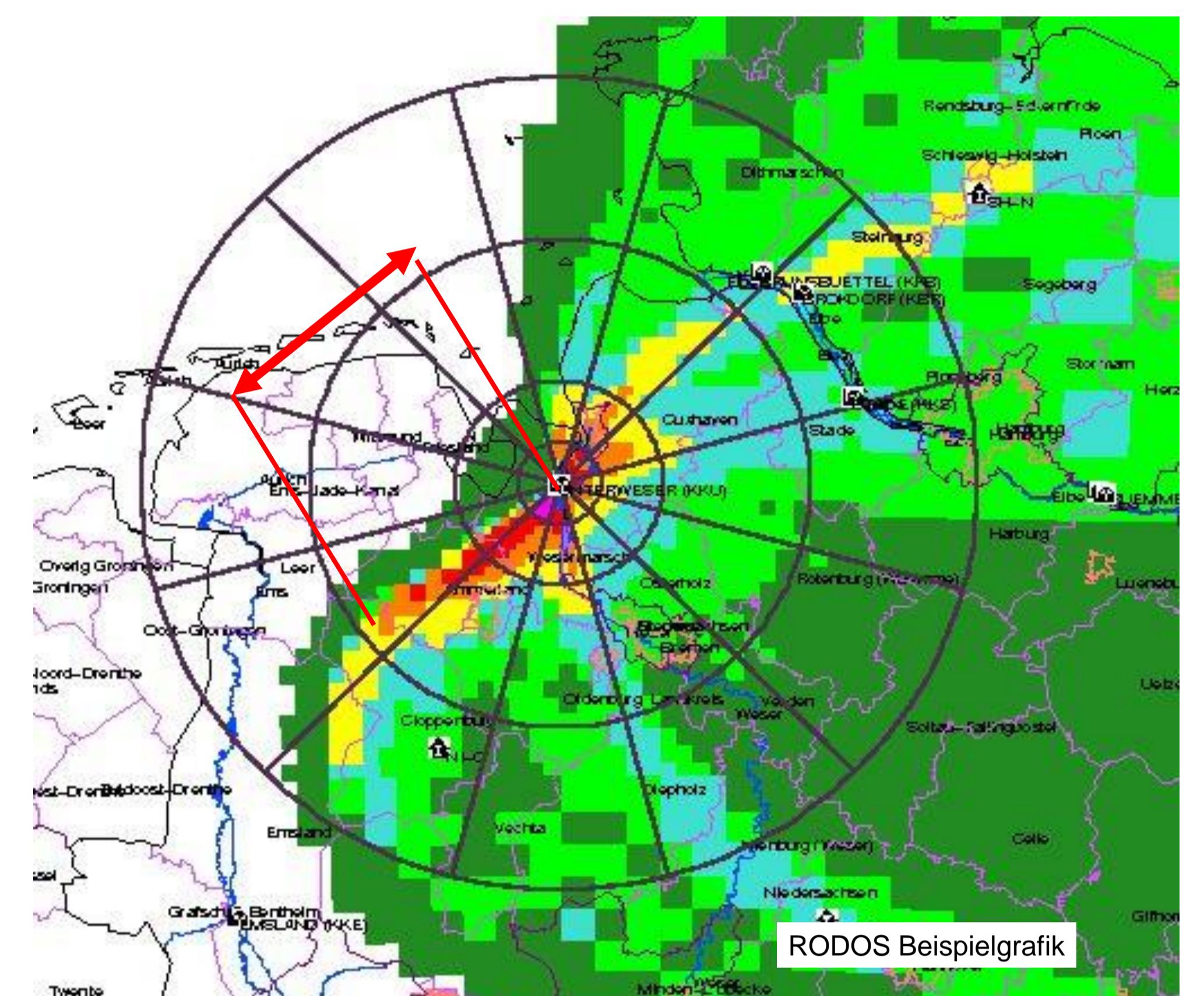
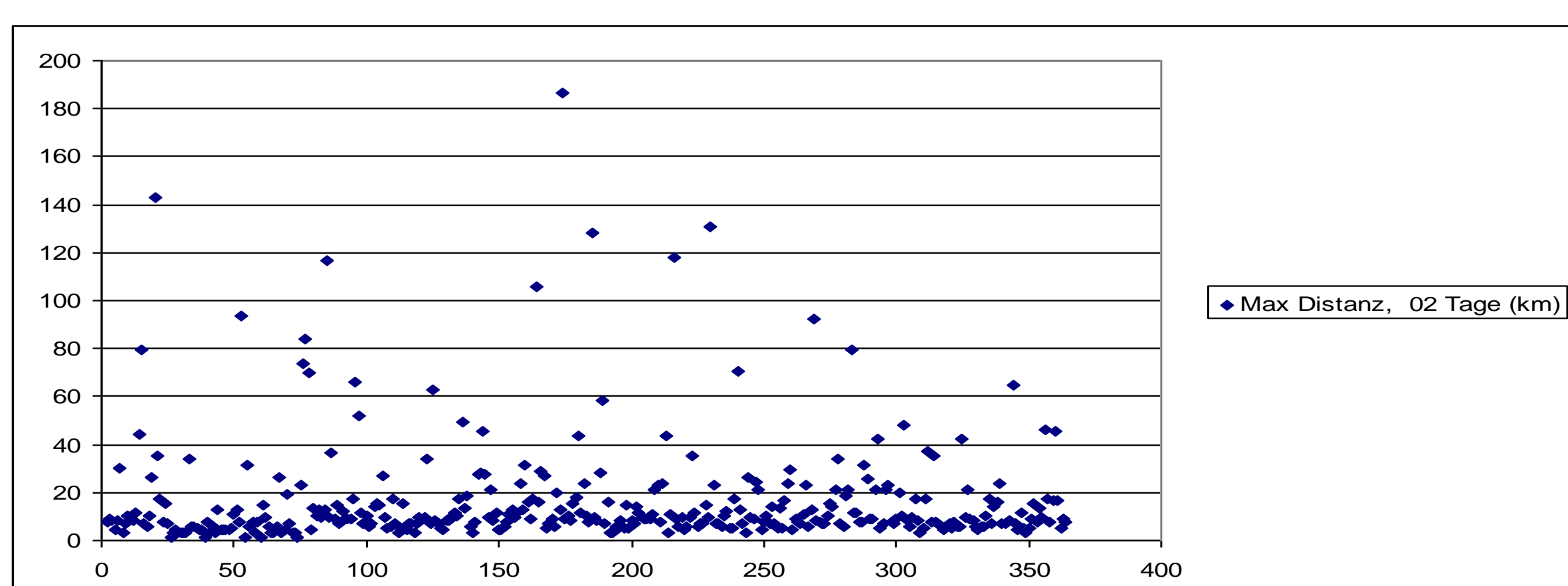
Examination of the Transferability of the Accident in Fukushima to Germany

The accident in Fukushima Dai-ichi on March 11th, 2011 (INES scale 7) gave reason to examine the transferability of this incident and with this the possible consequences on existing conditions in Germany with the Decision Support System RODOS especially in reference to the timely course and to the areas that are contaminated.

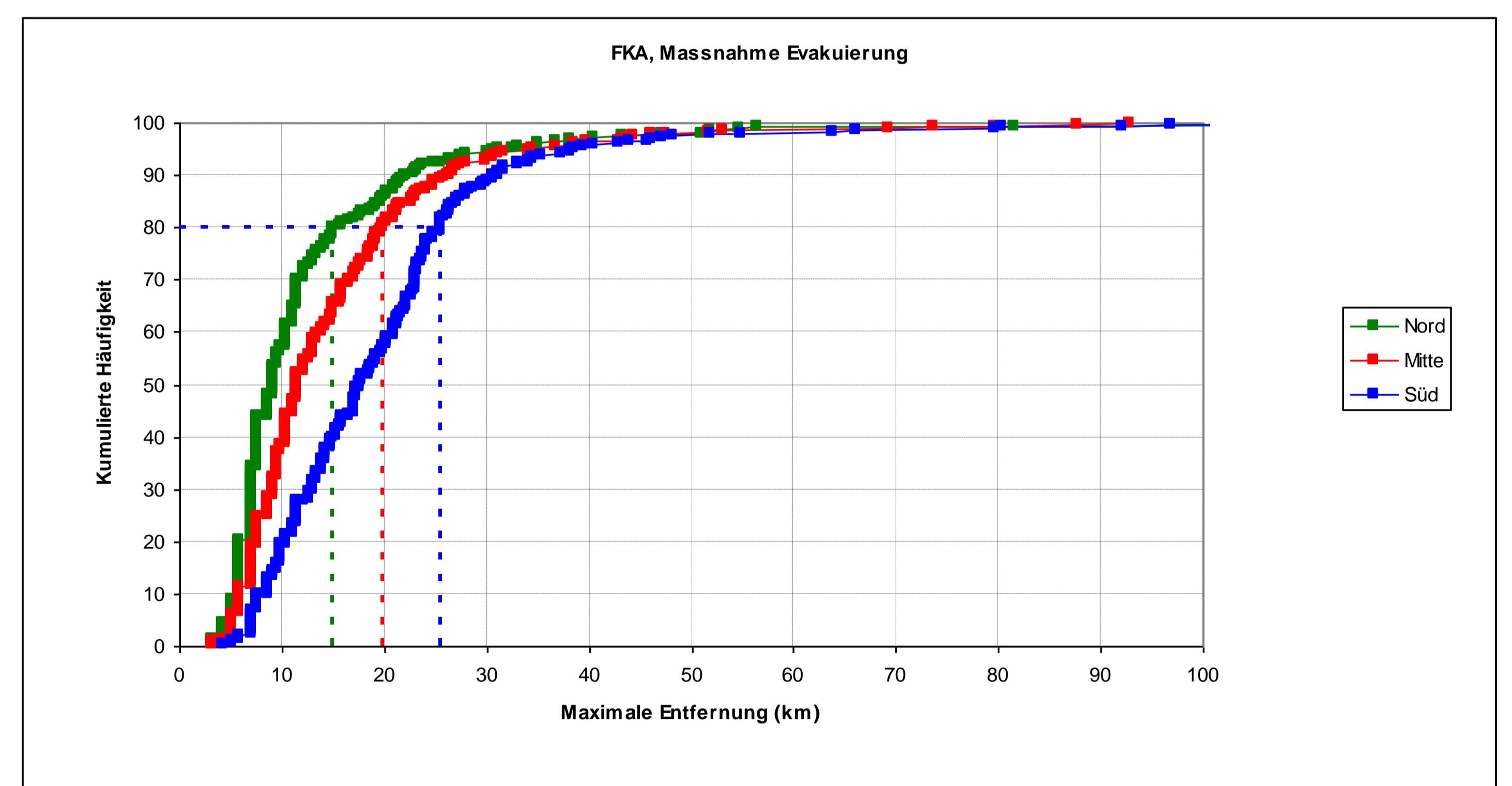
Computations with the Decision Support System RODOS

The Decision Support System RODOS is operational at the Federal Office for Radiation Protection in Germany since 2003 and has been enhanced since that time in cooperation with the Karlsruher Institut für Technologie (KIT) in essential features (operability, usage of meteorological data, dispersion models, dose computations, IT-platform).

Due to the reason of the accident in Fukushima further modifications have been conducted which allow to transfer the scenario of Japan on German situations. For three different sites in Germany (Unterweser, Grohnde, Philippsburg) computations with RODOS and with actual weather conditions for in total 365 days have been conducted and the resulting measures for emergency protection have been analysed statistically.



Graph 2 Results of the RODOS computation



Graph 3 Statistic results from RODOS computations for the maximum distances of an emergency protection measure (in this case evacuation) at three different sites in Germany

Conclusion

The results from RODOS concerning the maximal distance for defined emergency protection measures have been implemented in a new recommendation of the German Radiation Protection Commission which stipulates an extension of the previous planning zones for emergency protection in the vicinity of nuclear power plants. This recommendation has been published in March 2014 and will be implemented by the Federal States in Germany.

On the basis of the computations of the Federal Office for Radiation Protection in Germany the measures for emergency protection measures have been defined new. The planning zone „central zone“ will be enlarged from 2 to 5 km, the planning zone „middle zone“ from 10 to 20 km and the planning zone „outer zone“ from 25 to 100 km.