Masaru ISHII LAB.

[Lightning and Lightning protection]

Department of Informatics and Electronics

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High Voltage Engineering, EMP

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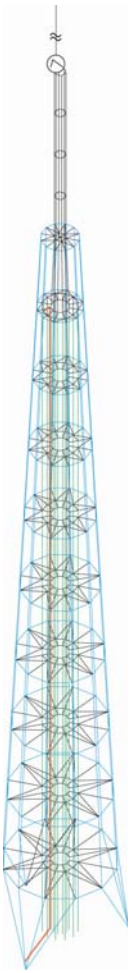
Lightning

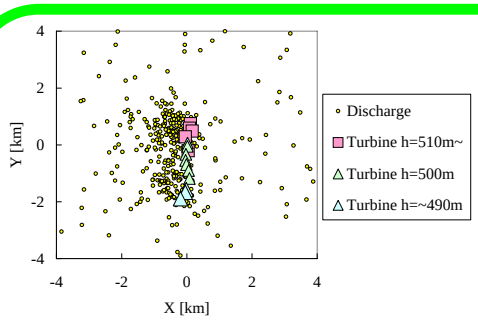
Lightning is beautiful. Even in these years, new lightning phenomena have been discovered. Lightning is still an interesting research subject. On the other hand, lightning threats the modern society relying heavily on electricity and information systems. Wind power generation systems and photovoltaic power generation systems require concrete lightning protection measures. In winter, upward lightning severely damages wind turbines on the coast of the Sea of Japan. Upward lightning is also anticipated to hit Tokyo Skytree frequently.



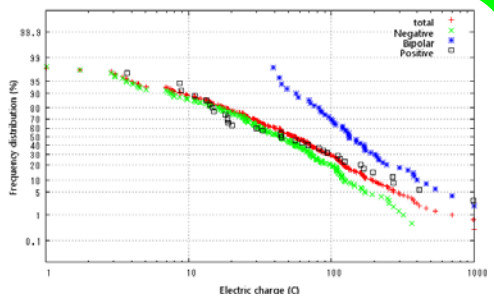
Model of Tokyo Skytree for electromagnetic analysis of lightning surges.

Lightning current observation system installed on 497m point of Tokyo Skytree.

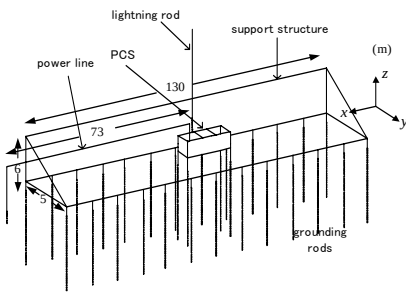
2011 Lightning Photography Contest: Grand Prix (Sponsored by Otowa Denki Kogyo Ltd.)



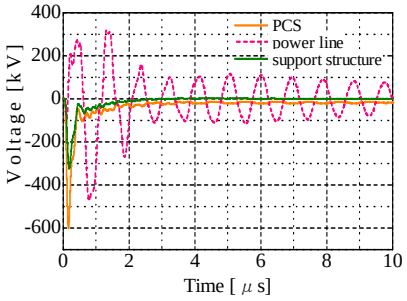
Lightning discharges observed by LLS at Nikaho wind farm.



Distribution of transferred charge associated mostly with upward lightning directly observed at wind turbines in winter.



Model of photovoltaic power generation system for electromagnetic analysis of lightning surges.



Induced voltages at PCS, power line and support structure on the occasion of lightning strike on lightning rod.