

## Development of a Multi-Factorial Instrument for Accident Analysis Based on Systemic Methods

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**Abstract :** The present research is built on three major pillars, commencing by making some considerations on accident investigation methods and pointing out both defining aspects and differences between linear and non-linear analysis. The traditional linear focus on accident analysis describes accidents as a sequence of events, while the latest systemic models outline interdependencies between different factors and define the processes evolution related to a specific (normal) situation. Linear and non-linear accident analysis methods have specific limitations, so the second point of interest is mirrored by the aim to discover the drawbacks of systemic models which becomes a starting point for developing new directions to identify risks or data closer to the cause of incidents/accidents. Since communication represents a critical issue in the interaction of human factor and has been proved to be the answer of the problems made by possible breakdowns in different communication procedures, from this focus point, on the third pylon a new error-modeling instrument suitable for risk assessment/accident analysis will be elaborated.

**Keywords :** accident analysis, multi-factorial error modeling, risk, systemic methods

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