Gautam number Gn of resilience

The Richter scale indicates severity of earthquakes. Following that in spirit, for extreme disasters, the Gautam number, Gn, furnishes a numerical value to quantify resilience, and its time rate of change depicts sustainability. Gns assess our comparative preparedness between catastrophic disasters. A socio-economic event is sustainable when its resilience grows in time.

The return period, as in, a hundred year earthquake or a fifty year storm, depicts the severity of a natural disaster. Years spent to achieve a satisfactory restoration is termed to be the recovery period.

The Gautam number, Gn defines the resilience to be the ratio of ‘return period’ to ‘recovery period.’ Usually, both are expressed in years for extreme disasters. Dasgupta, subsequently, identified the time rate of resilience to be the sustainability index.

Gautam Dasgupta, professor, Columbia university, since 2019, has elaborated on resilience and sustainability, regularly, in the spring and fall
Disaster Simulation Seminars at the Nakanoshima center, Osaka university, Japan. The conference chair, Dean emeritus of Architecture, Osaka university, Professor Eizaburo Tachibana, coined the term Gautam number and its abbreviation, Gn, to emphasize the nondimensional quantification of resilience in mitigating natural, industrial and terrorist disasters. Modern AI based computations, for

example, in climate sciences and transparency in governance, utilize the related tensorial concepts.