

ARTIFICIAL INTELLIGENCE

Natural Disasters Intensity Analysis & Classification using Artificial Intelligence

DATE	16 October 2022
TEAM ID	PNT2022TMID34298
PROJECT NAME	Natural Disasters Intensity Analysis and Classification using Artificial Intelligence

CYCLONE

Data Sources	Variables/Model	Units	Temporal Coverage	Spatial Coverage	Levels
NCEP/NCAR	geopotential height	m	4-times daily and daily	2.5 x 2.5 degree grid	multiple level
	precipitable water	kg m ⁻²	4-times daily	"	surface
	relative humidity	%	"	"	"
	sea surface pressure (SLP)	hPa	"	"	"
	u and v wind components	m s ⁻¹	"	"	"
	air temperature	°C	"	"	"
	relative vorticity	10 ⁻⁵ s ⁻¹	"	"	"
	moisture convergence*	g kg ⁻¹ s ⁻¹	hourly	"	"
ECMWF	Convective Available Potential Energy (CAPE)	J kg ⁻¹	"	0.5x0.5 degree grid	"
	total of precipitation	mm	"	"	"
APHRODITE	total of precipitation	mm	daily	0.25x0.25-degree grid	"
NOAA ARL	HYSPLIT backward trajectory	AGL	hourly	360 x 180 at 1 degree	multiple level

*Moisture convergence was computed with GrADS software using 7 variables: relative humidity, air temperature, vapour pressure mixing ratio, u and v wind components and dew point temperature.

EARTH QUAKE

EQ01 Northridge – 1994 ^a	6.7	17.40	9.71	2.91	2.22
EQ02 El Centro – 1940 ^a	6.9	2.14	3.49	2.37	1.47
EQ03 Kobe – 1995	6.9	8.21	5.99	1.47	1.42
EQ04 Loma Prieta – 1989 ^a	6.9	3.52	2.67	1.37	1.47
EQ05 Christchurch – 2010 ^a	7.0	7.38	6.64	0.76	0.71
EQ06 Miyagi Ken-Oki – 2003 ^b	7.1	8.25	11.10	7.89	6.96
EQ07 Chi-Chi – 1999 ^a	7.7	2.92	4.34	3.66	1.61
EQ08 Gorkha – 2015 ^a	7.8	1.54	1.60	0.22	0.22
EQ09 Chile Coquimbo – 2015 ^a	8.3	6.77	5.45	5.70	8.73
EQ10 Great East Japan – 2011 ^b	9.0	12.20	25.90	5.08	6.01