

that it reaches the ground in the nominal rain shadow on the lee side of a ridge.

**Storm-centred** Describes a characteristic of a storm that is always determined in relation to the maximum value in the storm (storm centre) as compared with the same factor for some other duration and/or area of the storm. For example, a storm-centred depth–area ratio relates the average depth over some specific isohyetal area of the storm that encloses the centre of the storm to the amount at the storm centre.

**Storm depression index** A term used in Chinese hydrological engineering. It is the exponent  $n$  in the relation:

$$a_{t,p} = \frac{s_p}{t^n}$$

where:  $s_p$  is the average rainfall intensity in one hour with probability  $p$ ; and  $a_{t,p}$  is the average rainfall intensity in  $t$  hours with probability  $p$ .

**Storm profile** Vertical section through an isohyetal pattern, with distance from centre as abscissa and corresponding depth of precipitation as ordinate.

**Storm survey** Data on the volume, the precipitation process and the temporal distribution of one storm in a region or place are determined through visits, surveys and estimations when there is no rainfall observable in the region, or large storms occurred before stations were set up, or the rainfall at the storm centre was not observed due to a small density of stations and other reasons, or rainfall observation stations failed to observe large storms for certain reasons.

**Storm simulation method based on historical flood** The basic concept of this method is to simulate the storm, which is regarded as a high efficiency storm relevant to a historical extraordinary flood, then to derive PMP after maximizing moisture. Simulation is to derive the extraordinary storm relevant to a historical flood based on the incomplete temporal and spatial distribution information of the known extraordinary historical flood, using the synoptic theory and weather forecast experience, with the assistance of the watershed hydrological model and computer and through trial computation.

**Storm transposition** The hypothetical transfer or relocation of storms from the location where they occurred to other areas where they could occur. The transfer and mathematical adjustment of storm rainfall amounts from the storm site to another location is termed “explicit transposition”. The

areal, durational and regional smoothing done to obtain comprehensive individual drainage estimates and generalized PMP studies is termed “implicit transposition”.

**Synoptic** Showing the distribution of meteorological elements over an area at a given moment; for example, a synoptic chart.

**Temporal distribution** The time order in which incremental PMP amounts are arranged within the PMP storm.

**Transposition model method** This method involves the transposition of the rainfall and the spatio-temporal distribution of an actual large storm in surrounding regions (or the meteorological homogeneous zone) to the design watershed and its treatment as PMP for a particular season and a particular duration for the design watershed after transposition correction and proper maximization.

**Tropical cyclone** Specifically, a storm producing wind speeds in excess of 60 m/s (120 km/h); generally, a cyclone of tropical origin.

**Total storm area and Total storm duration** The largest area size and longest duration for which depth–area–duration data are available in the records of major storm rainfall.

**Vapour pressure** Pressure of the water vapour in a sample of air.

**Warm front** Front at which relatively warmer air replaces colder air.

**Warm sector** Sector of warm air bounded on two sides by the cold and warm fronts extending from a centre of low pressure.

**Wave** Localized deformation of a front, resembling a warm-sector formation, usually travelling along the front and sometimes developing into a mature cyclone.

**Within/without-storm depth–area relations** Relations that evolve from the concept that the depth–area relation for area-averaged PMP represents an envelopment of maximized rainfall from various storms, each effective for a different area size(s). The within-storm depth–area relation represents the areal variation of precipitation within a storm that gives PMP for a particular area size. Another way of putting this is to say that the storm that results in PMP for one area size may not give PMP for any other area size. Except for the area size that gives