

Index

Page numbers in *italics* refer to Figures. Page numbers in **bold** refer to Tables.

- Aceh Besar earthquake (2013) 173–174, *176*, **176**
Aceh earthquakes (1621; 1837) **21**
Aceh Fault Segment 121, 122, *122*, 123
GMPE sensitivity analysis 128–129
hazard maps 124, *126*
locking width 126–128
PSHA 129
slip rates 124
advection-diffusion-sedimentation (ADS) models 190
aftershocks 11, **12–22**
Agency of Meteorology, Climatology and Geophysics *see*
Badan Meteorologi, Klimatologi, dan Geofisika (BMKG)
Ai Island 23
Albau Island 39
Alor Island 30
Ambarawa earthquakes (1865; 1866) **14, 20**
Amblau 23
Amboina earthquakes (1644; 1802, 1815) **12, 17**
Ambon *24, 25, 26, 27*
earthquakes (1672; 1675; 1705; 1754; 1777; 1802; 1815;
1830; 1835) **12, 13, 16, 17, 25, 26, 37, 38, 39, 40**
tsunami damage *25, 26*
Assam earthquake (1762) **12**
Astrolabe Bay earthquakes (1856; 1873) **13, 14, 22, 42**
Atapupu earthquake (1858-69) **18**
attenuation functions *see* ground motion prediction equations
(GMPE)
Australian Plate 2, *122, 191*

Bada Valley fault **79**
Badan Informasi Geospasial (BIG) 49
Badan Meteorologi, Klimatologi, dan Geofisika (BMKG)
4, 167, 169, 181
earthquakes, real time data 169–170, 172, 173–174, 175
Balantak Fault **79**, 88–89, 91, **112**, 140
Balantak Thrust *134*
Bali 2
earthquakes (1815; 1848) **19, 20**, 32–34
Bam earthquake 71
Banda Aceh 1, 10, *49*
Banda Api 24
Banda Arc 1, 2, *24*
Banda Islands 27
earthquakes (1629; 1683; 1710; 1743; 1763; 1778; 1816;
1852) **12, 13, 16, 17**, 36–37, 38, 39, 40, 41
reconstructing earthquakes 42
Banda Neira 24, 26, 27, 27, *28*
earthquakes (1816; 1824) **17**, 26–27
Banda Sea 1, 2, *24*
regional earthquake events 23–28
Bandis Fault 33
Banggai Islands 41, 93
Baribis Fault 33
Baros 39
Barus earthquake (1843) **13, 21**
Batavia earthquakes (1699; 1722; 1780; 1834) **12**,
13, 19, 20
Batu *49*
Batui Fault **138**
Batui Thrust *134*, 139–140

Bayesian generalized linear modelling technique *see*
fatality model
bedrock studies, Jakarta 153–154
seismic microzonation study
methods
genetic algorithm inversion 157
microtremor array 154–155
spatial auto-correlation 155, 157
results
1-D S wave 157–158
2-D and 3-D S wave 158–159, 161
borehole verification 163–164
summary 164
Belang 41
Belekomba earthquake (1820) 30
Bency fault 33
Bener Meriah earthquake (2013) 173, **174**
Bengkulen earthquakes (1756; 1770; 1818; 1833; 1871) **12**,
13, 14, 21, 38, 39
Biak earthquake (1996) 72
Bima earthquakes (1816; 1818; 1836) **13, 18**
Bobol Fault **78, 97, 113**
Bojongmanik Formation 154
Buitenzorg earthquakes (1812; 1818; 1823) **19**
Bulukomba 30
Bumiayu Fault 33
Burma Microplate *122*
Buru Island *24, 37, 39, 99, 101*
earthquakes (1659; 1848) **16, 17, 42**

Camplong Fault 32
Canterbury earthquake 71
Catabato Fault 22
Cenderawasih Bay 42, 108–109
Ceram 37
Cheribon earthquakes (1847; 1875) **13, 14, 19, 20**
Christchurch earthquake 71
Cikuray volcano 191
Cimandiri Fault Zone 33, 33, 153
Ciputat Sub-Basin 154
Ciremai *see* Gunung Ciremai
Citanduy Fault Zone 34
corals
palaeoseismic uplift *31, 50–52*
as model constraint 60, 63–64, 66
coseismic deformation 50–52
Cotabato Fault 22

deformation
coseismic deformation 50–52
surface deformation 53–54
Dilli earthquake (1857) **13, 18**
Djogjakarta earthquake (1867) **14, 20**

Earthquake Risk Model (EQRM) 123, 133, 136
earthquakes 2, 3
fatality model 4, 179
development 181–184
performance **186**
validation 186
forecasting 9

- earthquakes (*Continued*)
- real-time impact alert
 - future directions 174–175
 - processing data 171
 - ShakeMap 171–173
 - strong-motion network 168–169, 169
 - system architecture 169–171
 - reconstruction 42–43
 - significant **12**
 - site response 4
 - slip modelling for rupture scenarios 48
 - methods
 - Padang Consensus Model 52
 - slip model 52–54
 - tsunami model 54–56
 - results
 - slip model 56–57
 - tsunami model 57–60
 - results discussed 67–68
 - coral uplift constraints 60, 63–64, 66
 - non-modelled factors 67
 - slip model 61, 62, 66–67
 - summary 68
 - sources 3
 - Wichmann catalogue 9–10
 - extracts **12–22**
- East Buru Fault **112**
- East Java earthquake (1848) **20**
- East Lampung Fault 33
- East Sangihe Fault 23
- East Sangihe Thrust 134
- Eurasian Plate 191
- fatality estimation 2, 184–185
- fatality models 4, 179
 - development 181–184
 - performance **186**
 - validation 186
- fault activity, Quaternary 72–73, **112**, **113**
- datasets 73
 - geometry 111, 114
 - geomorphic indices 73, **74**, 75, 76, 77, **78**, **79**
 - Maluku 91, 92
 - Banggai-Sula Islands 93, 95
 - Bobol Fault 97
 - Buru 99, 101
 - Kawa Fault 97, 98
 - Rana Fault 101, 102, 103
 - Seram fold-thrust belt 95–97
 - Sorong Fault 95
 - Tarera-Aiduna Fault 97, 110
 - Papua and West Papua 103–104
 - Koor Fault 105
 - Mamberamo fold-thrust-belt 107
 - Ransiki Fault 105
 - Sorong Fault 104–105
 - Tarera-Aiduna Fault 109
 - Wandamen Peninsula faults 107, 107, 108
 - Yapen Fault 105, 106, 107
 - Sulawesi 75, 81
 - Balantak Fault 88–89, 91
 - Gorontalo Fault 91
 - Kolaka Fault 88, 89
 - Lawanopo Fault 88
 - Matano Fault 86, 87
 - Palu-Koro Fault 75–77, 80–81, 82, 83, 85
 - Sapu Valley Fault 84, 85–86
 - Western Tomini Bay faults 91
 - fault modelling 52–53
 - Flores 2
 - earthquakes (1855; 1992) **18**, 30, 40, 72
 - Flores Sea 2
 - Flores Thrust 11, 29, 30, 33
 - Fort Amsterdam earthquake damage 26, 27
 - Fort Henricus earthquake (1648) **12**
 - Fort Victoria earthquake damage 25
 - Galunggung earthquake (1822) **19**
 - Galunggung volcano 191
 - Geelvink Bay earthquake (1864) **14**, **22**
 - Genteng Formation 154
 - geomorphic indices, evaluation of tectonic rates in faulting 73, **74**, 75
 - geomorphological classification 141, **141**, 142
 - German-Indonesian Tsunami Early Warning System (GITEWS) 167, 168
 - global positioning system (GPS), ground deformation monitoring 199, 200, 201–203
 - Gorontalo, earthquake (1856) **13**, **15**, 40, 41
 - Gorontalo Basin 134
 - Gorontalo Fault 22, **78**, 91, **112**, 134, **138**
 - granulometry study, volcanic ash 191, 193, 194
 - Great Sumatran Earthquake 1
 - Great Sumatran Fault 1, 2
 - ground motion modelling
 - ground motion prediction equations (GMPE) 121, 128–129, 140, 181
 - ground motion to intensity conversion equations (GMICE) 181
 - Gunur volcano 191
 - Gunung Ciremai 4, 189
 - eruption history 191
 - map 192
 - pyroclastic fall grain size study 191, 193, 194
 - simulated eruption
 - methods 191–195
 - results 195–196
 - results discussed 196
 - summary 196–197
 - tectonic setting 190–191
 - Haiti earthquake 71, 210
 - Halmahera, earthquakes (1550; 1564; 1673; 1855; 1859) **15**, 22–23, 37, 40
 - Halmahera Arc 22
 - Haruku 24
 - Haruku earthquake (1854) **17**, 40
 - hazard assessment, reasons for 47–48
 - see also under tsunami*
 - hazard communication 43
 - hazard curves 124, 125
 - hazard maps 126
 - High-Resolution Stereo Camera (HRSC) 49–50
 - ‘In Harm’s Way’ 10
 - Indian Ocean Tsunami (IOT; 2004) 1, 3, 5
 - Indonesia 1
 - population 1, 167
 - significant earthquakes and tsunamis **12**, **13**, **14**, 36–42
 - Indonesian Tsunami Early Warning System (InaTEWS) 167, 168, 169
 - Indonesian volcanic arc 191
 - interferometric synthetic aperture radar (IFSAR) 49–50
 - interferometric synthetic aperture radar (InSAR), ground deformation monitoring 199, 200, 203–204
 - intraslab seismicity sources **138**, 140

- Jakarta 4
 earthquakes 38
 geology 154
 seismic microzonation study
 methods
 genetic algorithm inversion 157
 microtremor array 154–155
 spatial auto-correlation 155, 157
 results
 1-D S wave 157–158
 2-D and 3-D S wave 158–159, 161
 borehole verification 163–164
 summary 164
 setting 153–154
 Jakarta Basin 4, 154
 Jakarta earthquake (1818) **19**
 Jati Barang Sub-Basin 154
 Jatiluhur Formation 154
 Java 1, 2, 5, 167
 earthquakes (1584-6; 1771; 1818; 1822; 1848;
 1856; 1866; 1867; 1875) **12, 19, 20**,
 32–34, 36
 Java megathrust 153
 Java Sea 2
 Java Trench 2, *11*, 32, 34
- Kajeli Bay 42
 Kalimantan 2
 Kau Territory (1859) **13**
 Kawa Fault **78, 97, 100, 113**
 Kei Islands earthquake (1649) **16**
 Kema 41
 Kendari Fault **79, 112**
 Kisar earthquakes (1823; 1836) **18**
 Kisar Thrust 29
 Klapanunggal Formation 154
 Kolaka Fault 88, 89, **112**
 Koor Fault 105, **113**
 Krakatau (1883) 1, 10
 Kupang earthquakes (1793-5; 1814) **12, 18, 38**
 Kupang Fault 32
- Lapindo oil company 5
 Lasem Fault 33
 Lawanopo Fault **79, 88, 112, 134, 138, 150**
 Lease Islands (Uliasers) 24
 Lembang Fault 33, 153
 Lesser Sunda Island earthquakes **18**
 Leti earthquake (1714) **16, 17**
 Light Detection and Ranging (LiDAR) 49–50
 locking depths 121
 locking width 126–128
 Lombok 40
 Lonthor Island 23, 27
 Love waves 155
 Lowlands fault **113**
 Luf Island 42
 Lumpur Sidoarjo *see* LUSI mud volcano
 LUSI mud volcano 5
 causes 199–200
 initial eruption 199
 map 200
 methods of analysis
 crack observations 205–206, 208, 209
 ground deformation 199
 GPS 200, 201–203
 InSAR 200, 203–204
 horizontal ground displacement 205
 subsidence pattern **201, 202, 202, 204, 206, 206**,
 207, 208
 results discussed 209–212
- Madura Fault 33
 Majane fold-thrust belt 29
 Makassar 29
 earthquakes (1690; 1820) **13, 18, 30**
 Makassar Basin 29
 Makassar Fault **138**
 Makassar Thrust 134, *134*, 140
 Makassar Trench 29
 Makjan (Makian; Molukken) Island earthquakes
 (1646; 1859) **12, 37, 41**
 tsunami (1608) 36
 Malino boundary fault **78, 112**
 Maluku (Molucca Islands)
 earthquake events **16, 17, 23–28**
 population 25
 Quaternary fault activity 91, 93
 Buru **78, 99, 101**
 Kawa Fault **78, 97, 100**
 Sorong Fault **78, 79, 93, 95**
 Mamberamo fold-thrust belt 107, **113**
 Mana earthquakes (1755; 1770) 38
 Mangole Fault **112**
 Mangole Island 93
 mass failure events 67
 Matano Fault 29, 86, 87, **112, 134, 138, 150**
 Menado earthquakes (1845; 1857) **13, 15, 40, 41**
 Mentawi Backthrust 67
 Mentawi Fault Zone 33, 35
 Mentawi Islands 48, 49
 palaeoseismic uplift 50–52
 Mentawi Segment (Sunda Subduction Zone)
 earthquake potential 48
 modelling earthquake rupture scenarios
 methods
 Padang Consensus Model 52
 slip model 52–54
 tsunami model 54–56
 results
 slip model 56–57
 tsunami model 57–60
 results discussed 67–68
 coral uplift constraints 60, 63–64, 66
 non-modelled factors 67
 slip model 61, 62, 66–67
 summary 68
 Mercalli intensity *see* Modified Mercalli Intensity (MMI)
 microtremor array for Jakarta
 seismic microzonation study
 methods
 genetic algorithm inversion 157
 microtremor array 154–155
 spatial auto-correlation 155, 157
 results
 1-D S wave 157–158
 2-D and 3-D S wave 158–159, 161
 borehole verification 163–164
 summary 164
- Minahassa
 earthquake (1858) **13, 15, 22–23, 41**
 earthquake (2008) 72
 Minahassa Peninsula 40
 Minahassa Trench 23, 138–139, *139*
 modelling techniques
 advection-diffusion-sedimentation (ADS) models 190

- modelling techniques (*Continued*)
 Earthquake Risk Model (EQRМ) 123, 136
 earthquake rupture modelling *see* slip modelling
 fatality models 4, 179
 development 181–184
 performance **186**
 validation 186
 fault modelling 52–53
 ground motion modelling
 ground motion prediction equations (GMPE) 121, 128–129, 140, 181
 ground motion to intensity conversion equations (GMICE) 181
 slip modelling for earthquake rupture scenarios 48
 methods
 Padang Consensus Model 52
 slip model 52–54
 tsunami model 54–56
 results
 slip model 56–57
 tsunami model 57–60
 results discussed 67–68
 coral uplift constraints 60, 63–64, 66
 non-modelled factors 67
 slip model 61, 62, 66–67
 summary 68
- Modified Mercalli Intensity (MMI) 11, **12–22**, 146, 147, 181
 Molino Metamorphic Complex 91
 Molucca Collision Complex 22, 22, 23
 Molucca Islands (Maluku)
 earthquake events **16**, **17**, 23–28
 population 25
 Quaternary fault activity 91, 93
 Buru **78**, 99, 101
 Kawa Fault **78**, 97, 100
 Sorong Fault **78**, **79**, 93, 95
 Molucca Sea, earthquakes events **15**, 22–23
 Molucca Sea Plate 1, 23, 134
 Molukken (Makjan; Makian) Island earthquakes (1646; 1859) **12**, 37, 41
 tsunami (1608) 36
- mountain front sinuosity
 defined 73, **74**
 Palu-Koro Fault 77
- mud volcanoes 1, 5
 LUSI mud volcano 5
 causes 199–200
 initial eruption 199
 map 200
 methods of analysis
 crack observations 205–206, 208, 209
 ground deformation 199
 GPS 200, 201–203
 InSAR 200, 203–204
 horizontal ground displacement 205
 subsidence pattern **201**, 202, **202**, 204, 206, **206**, 207, 208
 results discussed 209–212
- Nanga Rama, earthquakes 40
 neotectonics, defined 72
 New Guinea, earthquakes **22**, 42
 New Guinea Trench 36
 Nias Island 49
 earthquake (1763) **21**, 38, 39, 41
 earthquake (2005) 179, 180, **181**, 185
- Nicobar minor earthquake (1847) **13**, **21**, 40
 North Sorong Fault 134
 North Sulawesi Fault **138**
 North Sulawesi Subduction Zone 134
 North Sulawesi Trench 22
 Nusa Laut 24
 Nusa Tello Islands 37
 Nusa Tenggara 30, 32
- Ocussi earthquake (1857) **18**
 Opak Fault 33, 34
 original consensus model *see* Padang Consensus Model
- Pacific Ring of Fire 189
 Padang 48, 49, 50
 inundation model 64
 Padang Consensus Model 50, 52, 67–68
 Padang earthquake (1797) **12**, **21**
 Pagai Islands 50
 Pajitan earthquake (1840) **13**, **19**, **20**
 palaeoseismology, defined 72
 Palembang earthquake (1799) **12**, **21**
 Palu-Koro Fault 3, 22, 29, 29, 75–77, **78**, 80–81, 82, 83, 85, **112**, 134, 134, 135, **138**, 150
- Pamanukan Sub-Basin 154
 Pangandaran, tsunami deposits 35, 36
 Paniai Fault **113**
 Papandayan volcano 191
- Papua
 earthquake (1864) 36, 42
 earthquake (1976) 71–72
 Quaternary fault activity 103–104
 Koor Fault 105
 Mamberamo fold-thrust belt 107
 Ransiki Fault **79**, 105
 Sorong Fault **78**, **79**, 104–105
 Tarera-Aiduna Fault **79**, 109
 Wandamen Peninsula faults **79**, 107–108
 Yapen Fault 105, 107
- Parigi boundary fault **78**, **112**
 Pasir Putih Sub-Basin 154
 Pasuaran earthquake (1818) **19**
 Paternoster Fault 29, 29
- Peak Ground Acceleration (PGA) 3, 146, 148, 149, 150
 Philippine Trench 22
 Poso Fault **138**
- probabilistic seismic hazard assessment and analysis (PSHA)
 3–4, 121, 122–123
 Aceh Fault Segment 129,
 Sulawesi
 crustal source zones 136
 factors
 fault input parameters 138–140
 fault sources 137–138
 ground-motion 140
 intraslab sources 140
 site amplification 140–142
 results 142–146
 central-east region 144
 north region 142–143
 south-SE region 145–146
 west region 144–145
 results discussed 146–150
- Prompt Assessment of Global Earthquakes for Response (PAGER) 179
- Quaternary
 fault activity 72–73, **112**, **113**
 datasets 73
 geometry 111, 114

- geomorphic indices 73, **74**, 75, 76, 77, **78**, **79**
 Maluku 91, 92
 Banggai-Sula Islands 93, 95
 Bobol Fault 97
 Buru 99, 101
 Kawa Fault 97, 98
 Rana Fault 101, 102, 103
 Seram fold-thrust belt 95–97
 Sorong Fault 95
 Tarera-Aiduna Fault 97, 110
 Papua and West Papua 103–104
 Koor Fault 105
 Mamberamo fold-thrust-belt 107
 Ransiki Fault 105
 Sorong Fault 104–105
 Tarera-Aiduna Fault 109
 Wandamen Peninsula faults 107, 107, 108
 Yapen Fault 105, 106, 107
 Sulawesi 75, 81
 Balantak Fault 88–89, 91
 Gorontalo Fault 91
 Kolaka Fault 88, 89
 Lawanopo Fault 88
 Matano Fault 86, 87
 Palu-Koro Fault 75–77, 80–81, 82, 83, 85
 Sapu Valley Fault 84, 85–86
 Western Tomini Bay faults 91
- Rana Fault **78**, 99, 101, 102, 103, **112**
 Ranau Fault 33
 Randaway Fault Zone 105
 Ransiki Fault **79**, 105, **113**
 Rayleigh waves 155
 relative tectonic activity, defined 75
 Rengasdengklok Sub-Basin 154
 Rengganis Formation 154
 Response Spectral Acceleration (RSA) 3
 Rinjani (1257) 1
 Rook Island earthquake (1857) **13**, **22**
 Roti Island earthquakes (1866) **18**
- S-waves
 velocity profile
 1-D 157–158
 2-D and 3-D 158–159, 161
 Salajar Trough 29
 Sanana fault **112**
 Sangihe Arc 22, 22, 23
 Sangihe Island 40
 Saparua 24
 earthquakes (1671; 1849) **12**, **13**, **16**, **17**, 37, 40
 Sapu valley fault system **78**, 84, 85–86, **112**
 Savu Thrust 29, 31
 seismic hazard analysis, deterministic v. probabilistic
 122–123
 Semangko Fault Zone 153
 Semarang earthquake (1773) **19**
 Semarang Fault 33
 Semau Fault 29, 31, 32
 Serain 24
 Seram fold-thrust belt 95–97, 98, **113**
 Seram Island 24, 26, 95, 96
 Seram Trough 11, 24, 42, 95
 Serpong Formation 154
 Serua earthquake (1683) **16**
 Seulimeum Fault 121, 122
 ‘ShakeMap’ 168, 171–173, 181
 Siberut 50
 slip consensus modelling 52, 64
 Sidangola Basin 41
 Sinabung, Mount 4
 Singjek earthquake (1873) **21**
 Singkel earthquake (1873) **14**
 sinuosity, mountain front
 defined 73, **74**
 Palu-Koro Fault 77
 Sipora Island 50, 65, 66
 slip modelling
 earthquake rupture scenarios 48
 methods
 Padang Consensus Model 52
 slip model 52–54
 tsunami model 54–56
 results
 slip model 56–57
 tsunami model 57–60
 results discussed 67–68
 coral uplift constraints 60, 63–64, 66
 non-modelled factors 67
 slip model 61, 62, 66–67
 summary 68
 slip rates 121
 Aseh 124
 soil, seismic wave amplification 140–142
 Solok earthquake (1853) **13**
 Solor Island, earthquake (1648) **18**, 37
 Sorong Fault 11, 22, 23, 29, 36, **78**, **79**, 93, 95, 104–105, **113**
 source term, defined 191
 South Seram earthquake (1664) **16**
 South Sorong Fault 134
 Southern Seram Fault **112**
 spatial auto-correlation 155–157
 strong motion sensors network 168–169, 169
 real-time impact alert
 future directions 174–175
 processing data 171
 ShakeMap 171–173
 strong-motion network 168–169, 169
 system architecture 169–171
- Sula Fault **138**
 Sula Islands 93
 Sula Spur 134
 Sula Thrust 134
 Sulawesi 2, 3, 40, 41, 133
 active faults 134
 earthquake epicentres 135
 probabilistic seismic hazard assessment (PSHA)
 crustal source zones 136
 factors
 fault input parameters 138–140
 fault sources 137–138
 ground-motion 140
 intraslab sources 140
 site amplification 140–142
 results 142–146
 central-east region 144
 north region 142–143
 south-SE region 145–146
 west region 144–145
 results discussed 146–150
 Quaternary fault activity 75–91, 86, 87
 Balantak Fault 88–89, 91
 Gorontalo Fault **78**, 91
 Kolaka 88, 89
 Lawanopo Fault **79**, 88
 Matano Fault **79**, 86, 87

- Sulawesi (*Continued*)
 Palu-Koro Fault 3, 22, 29, 29, 75–77, **78**, 80–81, 82, 83, 85
 Sapu valley fault system **78**, 84, 85–86
 setting, seismotectonic/geologic 133–136
- Sumatra 2, 49
 earthquakes **21**, 34–36, 38, 39
- Sumatran Fault 49
 Sumatra megathrust 153
 Sumatra Trench 122
 Sumatra-Andaman Islands earthquake (2004) 167
 Sumatran Fault 35, 49
 Sumatran Fault System 121, 122, 124
 Aceh Fault Segment 121, 122, 122, 123
 GMPE sensitivity analysis 128–129
 hazard maps 124, 126
 locking width 126–128
 PSHA 129
 slip rates 124
- Sumba earthquakes (1869) **18**
- Sumbawa 2
 earthquake (1815) **13**, **17**, 30
- Sunda Arc 32, 191, 192
 Sunda Block 122
 Sunda Craton 32
 Sunda Fault Zone 153
 Sunda Strait earthquake (1848) **20**
 Sunda Subduction Zone 48, 49
 Mentawi Segment
 earthquake-tsunami potential 48
 modelling earthquake rupture scenarios
 methods
 Padang Consensus Model 52
 slip model 52–54
 tsunami model 54–56
 results
 slip model 56–57
 tsunami model 57–60
 results discussed 67–68
 coral uplift constraints 60, 63–64, 66
 non-modelled factors 67
 slip model 61, 62, 66–67
 summary 68
- Surabaya earthquake (1815) **19**
 surface deformation 53–54
- Tagulandang Island 42
 Taliabu Island 93
 Tambarama Fault 91
 Tambora (1815) 1, 10, 30
 Tambora earthquake (1815) **18**
 Tamporanas volcano 191
 Tangkuban Parahu volcano 191
 Tanimbar Trough 11, 43
 Tapanuli Province 42
 Tarera-Aiduna Fault **79**, 109, **113**
 tectonic activity *see* relative tectonic activity
 Teon Islands earthquake (1659) **16**
 Ternate earthquakes (1608; 1673; 1770; 1840; 1855; 1859)
12, **13**, **15**, 22–23, 36, 37, 39, 40, 41
- Tidore Islands 41–49, 91
 earthquakes (1846; 1855) 40
- Timor 2
 Timor earthquakes (1638; 1854) **18**, 38
 Timor orogenic wedge 30
 Timor Trough 2, 11, 30, 31
 Tohoku earthquake (2011) 48
 Toli-toli earthquake 133
 Tolo Fault **138**
 Tolo Thrust 134
 Tomini Bay bounding faults 91
 Towitu Towuti bounding fault **79**, **112**
 tsunamis 1, 3
 catalogue (1600–1877) 36–42
 forecasting 9
 hazard assessment for Padang 47–48, 49–50
 Mentawi Segment earthquake-tsunami potential 48
 modelling earthquake rupture scenarios
 methods
 Padang Consensus Model 52
 slip model 52–54
 tsunami model 54–56
 results
 slip model 56–57
 tsunami model 57–60
 results discussed 67–68
 coral uplift constraints 60, 63–64, 66
 non-modelled factors 67
 slip model 61, 62, 66–67
 summary 68
- Ujung Kulon Fault Zone 33
 Uliasser Islands (Lease Islands) 24, 37, 38, 40
 Una-Una Volcano 134
- valley floor width to valley height index 73, **74**, 75
 Palu-Koro Fault 77
- volcanic ash 4, 189
 advection-diffusion-sedimentation (ADS)
 modelling 190
 FALL3D and PF3D modelling 190
 ground loading hazard modelling *see* Gunung Ciremai
 pyroclastic fall grain size study 191, 193, 194
 volcanoes and volcanic hazard 1, 2, 4, 189
see also mud volcanoes
- Walanae Fault 29, 29, 134, **138**
 Wandamen Peninsula faults **79**, 107–108, **113**
 Watukosek Fault 210, 211
 Wenchuan earthquake 71
 West Java earthquake (2009) 179, 180, **180**, **181**, 185
 West Mollucca Sea Fault **138**
 West Sumatra earthquakes (1833; 1861) **13**, **14**
 West Sumatra earthquake (2009) 179, 180, **180**,
181, 185
 West Timor earthquakes (1829; 1866) **18**
 Wetar Strait Fault 29, 31
 Wetar Thrust 11, 29, 30, 31
 Wichmann, Arthur 9
 catalogue of earthquakes and tsunamis 9–10
 extracts **12–22**
- Yapen earthquake (2010) 72
 Yapen Fault 105, 107, **113**
 Yogyakarta earthquake (2006) 5, 167, 179, 180, **180**, **181**,
 182, 185, 200, 209, 210