

Index

Page numbers in *italics* refer to Figures or Tables

- Aalburg Formation 311
Abu Alaqa Group 64
Abu Zenima Formation 59
Ahnet basin 86
Almazán basin 440
Alpine fault 549
Alpine Foreland 56
Alpine orogeny 28
Altiplano 45
analogue modelling
 deformation 580–2
 dip-slip inversion
 domino fault array 109–11
 listric faults 101–6
 planar faults 106
 ramp-flat listric faults 106–9
 summary 111–17
 extension faults 100–1
 extension measurement 122–5
 inversion measurement by clay model
 122, 125–8, 129–34
 inversion measurement by sand model 8
 methods 137–8
 results 138–41, 141–2, 143–5
Anambra basin 91
Anza rift 469
apatite fission track analysis
 role in thermal history reconstruction 150
 East Midlands Shelf 153
 Irish Sea 155–6
 Moray Firth (Inner) 158–9
 Otway Ranges 528–9, 535
 Pennine Axis 157–8
 SE Australia 160–1
 Taranaki basin 151–2
 UK Mesozoic basin data 23, 24
 use for burial evidence 168, 178–9, 481
apparent exhumation
 defined 175, 195
 results for Chalk studies 199, 200–2
Aquitaine foreland basin 415, 416
Argentina 53, 54
 basement history 213
 hydrocarbon systems 227–30
 inversion basins and hydrocarbons 213–14
 Cuyo basin 217–21, 229, 230
 Neuquén basin 221–7, 229, 230
 Noroeste basin 214–17, 229, 230
 San Jorge basin 227, 229, 230, 235–47
Argo Formation 253, 254
Armorican Platform 173, 177, 192
Arnager graben 320, 323, 325, 328
arrowhead geometry 100, 112
Australia
 Bass Basin 525–6
 basement fabric 544
 inversion history 536–43
 inversion mechanism 543–4
 rift failure 527–8
 rift orientation 526
 thermal history 161, 163
 thermochronology 528–36
 Eromanga basin 184
 Gippsland basin 44, 161, 163, 525
 Otway basin 160–1, 163, 525, 526, 527
Avalon Uplift 250, 263, 264

BABEL profile 321–2
Bajo Barreal Formation 238, 239, 241
Baltic Sea (South) inversion study
 basement 322–4
 data collection 321–2
 deep structure 333–6
 inversion events 329, 329–31, 331–3
 setting 321
 stratigraphy
 post-rift 329
 pre-rift 324
 syn-rift 324–9
barite veins 360, 369–73
Barry Old Harbour 356, 362, 374
Base Cretaceous Unconformity 279, 280
Bass basin *see* Australia
Bendrick Rock 356, 364
Bengal fan 473
Benue trough 469
biomarker maturity 179
Biscay, Bay of 415
Black Rock 356, 358
block rotation 501–3
Blue Anchor Bay 356, 401
Blue Anchor Formation 396, 397
Boixols thrust sheet 415, 416, 417
 evolution 427
 modelling 427–30
 setting 415–16
 stratigraphy 416–23
 structure 423–7
 thrust evolution 427
Bonne Bay graben 265–6, 267
boudinage 360, 373
Bourg-d'Oisans half-graben 343–4

- Brazil offshore basins 47
- Bristol Channel basin
 extension fault geometry 397–405
 hydrocarbon potential 387–9
 seismic profiles 409–10
 setting 355–6, 393
 stratigraphy 397
 structural analysis
 methods 356–7
 results 357–61, 361–9
 results discussed 383–7
 results interpreted
 fracture porosity 376–7
 inversion 374–6
 rifting 369–74
 tectonic summary 407–9
 timing of deformation
 Cretaceous–Tertiary 411–12
 Permian–Cretaceous 410–11
- Bristol Channel fault zone 356
- Broad Fourteens Basin
 deformation history 312–16
 inversion controls 347–8
 inversion history 346–7
 northeast margin study 308–11, 311–12
 setting 307–8, 345
- Brunner anticline 553, 561, 562
- Bunter Sandstone 311
 diagenesis 183–4
 sonic velocity plot 170
see also Buntsandstein
- Bunter Shale 311
 diagenesis 183–4
 sonic velocity plot 170
- Buntsandstein
 Cameron basin 435
see also Bunter Sandstone
- burial depth, interpretation of 167–8
- calcite
 on fault planes 364, 373, 463
 in veins 359–60, 362, 373
- Cameron syncline 561, 562
- Cameros basin *see* Spain
- Cape Foulwind fault zone 565
- Cardigan Bay basin 589
- Castillo Formation 238, 239, 241
- Caswell Bay 356, 361
- Catalan Coastal Chain 435
- Ceara Piaui basin 47
- Celtic Sea
 burial depth significance 203–5
 burial/uplift studies 171, 172
 exhumation role in hydrocarbon generation 203
 exhumation studies by sonic velocity 176, 179
see also exhumation
 regional setting 192, 193
 structural elements 173, 174
 Chalk 311
 apparent exhumation data 199, 201
 depth data in Celtic Sea/SW Approaches 196, 197
 interval transit time/depth plots 198
- China basins 84, 85
- clay minerals and effect on frictional fault
 reactivation 4–5
- Cleethorps well 175, 176, 182–3
- Colonus Shale Trough 324, 326
- compression
 effect on fluid storage 9–10
 fault behaviour 6–8
 role in inversion of 53
- Cormorant anticline 254
- Cornubian Platform 173, 177, 192
- Cotthelstone–Watchet fault 355, 356, 364, 393, 394
- Cretaceous events
 Bass basin development 526–7
 Boixols thrust sheet 421
 Bristol Channel 385, 411–12
 Cameros basin stratigraphy 435–9
 Kyokpo basin 458, 468
 New Zealand 551
- Cuyo (Cacheuta) basin
 chronostratigraphy 229
 setting 212, 217–20, 230
 traps 220–1
- Danish Central Graben, inversion
 measurement 119, 120
- Delfland Formations 311
- Devoluy massif 344–5
- diagenesis and burial depth 183–4
- Diaoyudao uplift 494
- diapirism, role in inversion of 281
- Dinas Powys fault 364
- dip-slip inversion modelling
 domino fault array 109–11
 listric faults 101–6
 planar faults 106
 ramp-flat listric faults 106–9
 summary 111–17
- Dnieper–Donets basin 39, 40
- domino fault, analogue modelling of 109–11
- Donghai Group 495
- Dowsing fault zone 173, 175
- Drum Line seismic reflection profile 27, 33–4
- Eakring oilfield 99
- East China Sea basin 493–8
 fault-related fold growth study methods
 block rotation 501–3
 geometry 498
 keystone faults 504–5
 listric faults 505

- East China Sea basin—*cont'd*
 modelling hangingwall anticlines 501
 reconstruction and restoration 505–6
 methods 506–12
 results 513–16
 results discussed 516–20
 single fault rotation 503–4
 timing 498–501
- East Midlands Shelf
 burial/uplift studies 171, 172
 thermal history 153–5
 uplift and tectonic modelling 184–7
- East Penguin fault 293, 294
- East Shetland basin 275–6
 inversion history 281–2
 Penguin ridge evidence 290–5
 Tern sub-basin evidence 282–90
 inversion mechanics 295–303
 lithostratigraphy 277
 tectonic history 278–81
 tectonic summary 303–4
- Ebro basin *see* Spain
- Egret fault 263, 264
- Eromanga basin 184
- Esna Shale Formation 59, 61
- Eumeralla Formation 529
- evaporites, effect on frictional fault reactivation
 of 4–5
- eversion 552
- exhumation
 apparent 175, 195
 defined 193
 Tertiary studies 27–9
 regional studies
 Celtic Sea 202–5
 North Sea results 175–7
 Scandinavia results 179
 SW Approaches 202–5
 role in hydrocarbon generation 182–4, 203
 tectonic modelling 184–7, 205–6
 timing 179–82
 use of sonic velocity in studies
 continental shelf results 175–9
 interval transit time relations 197–200
 lithology effect 171–5
 methodology 168–71, 193–5
 results discussed 200–2
 stratigraphic effects 185–7, 195–7
- extension
 effect on fluid storage 9–13
 fault systems
 analogue modelling 100–1
 inversion 101–11
 summary 111–17
 geometry of inversion 99–100
 role in inversion 281
 measurement 122–5
 regional studies
 Bristol Channel 397–405, 410–11
 Cameros basin 447–50
 Jeanne d'Arc basin 259–63
 New Zealand 570–1
 Nias Island 478–80
- facies modelling 459–63
- faisceau structures 340
- fault geometry, changes with inversion 129–32,
 135
- fault valves 13–14, 16, 389
- faults
 regional studies
 Bristol Channel basin 364–9, 375–6,
 397–405, 412
 East China Sea basin 498–500
 Kyokpo basin 463–4
 New Zealand 574–80
- types and behaviour
 compression 6–8
 domino 109–11
 extension 5–6, 100, 101–2
 keystone 504–5
 listric 8, 101–6, 138–41, 505
 normal 3–5, 8–9, 129–32, 135
 planar 106
 ramp-flat 106–9, 141–2
 reverse 8
 relation with rotation 501–4
see also thrusts and thrusting
- flexural cantilever model 503, 504
- flexure, lithospheric 28
- fluid distribution 9–13, 13–16
- folding
 geometry change with inversion 129,
 135
 regional studies
 East China Sea basin 505–6
 methods 506–12
 results 512–16
 results discussed 516–20
 Kyokpo basin 464–5
 San Bernardo foldbelt 245–6
- forced folds 501
- Fourteens Clay 311
- fracture porosity 376–82
- Fresne well, use in thermal history
 reconstruction 150–3
- friction, role in inversion of 4–8
- Gamal Fault 64, 65
- Gault Clay
 apparent exhumation data 199, 201
 depth data in Celtic Sea/SW Approaches 196,
 197
 exhumation and sonic velocity 171,
 174
 interval transit time/depth plots 198

- geometric modelling and basin geometry
 Boixols thrust sheet 427–30
 role in basin analysis 24–7
- Gippsland basin 44, 161, 163, 525
- gold/quartz vein systems 14–15
- Golden Bay terrane 551
- Gomo sub-basin 478–80, 481–2
- Gothian Terrain 322
- grain-boundary sliding 373
- Great Glen fault 173, 175
- Greensand
 apparent exhumation data 199, 201
 depth data in Celtic Sea/SW Approaches 196, 197
 exhumation and sonic velocity 171, 174
 interval transit time/depth plots 198
- Grey Valley basin 561, 562
- Griegs beach 574, 575
- Gulf of Suez rift 84, 91
 fault kinematics 68–9
 geological setting 59
 inversion evidence 62–8, 69–73
 relevance to North Sea exploration 73–80
 stratigraphy 59–62
 structural history 62
 gypsum veins 360
- halokinesis 260–1
- hangingwall anticlines 501
- Hanö Bay Basin 324, 326
- harpoon geometry 100, 112
- Helder Field 312
- Hod Formation 171, 174
- Holland Formation 311
- Hoorn Field 312
- hopane maturity 179
- Horda fault system 284
- hot spots, role in inversion of 281
- Howardian–Flamborough fault zone 173, 175
- Huabei basin 84
- Huagang Formation 495
- Hutton Sandstone 184
- hydraulic fractures 10
- hydrocarbons
 generation
 factors affecting *see* thermal history
 role of uplift in 182–4
 habitats in relation to inversion 91
 Argentina regional study 213–14, 227–30
 Bristol Channel study 376–82, 387–91
 exploration success 89
 field size 89
 rift inversion classification 83–9
 seepage 89–91
 traps 217, 220–1, 224–7
- Iberian Chain 435
- igneous activity
 magmatism 29–33, 33–4
 volcanism 458
- Indaal Lough, seismic reflection profile 25
- Indonesia 469
 hydrocarbon potential 85, 91
 Nias Island study
 basement ophiolite 474–8
 extension history 478–80
 inversion history 480–9
 setting 473–4
- inversion
 analogue modelling 8
see dip-slip inversion modelling
 inversion measurement by clay models
 methods 122
 results 125–8
 results discussed 129–34
 inversion measurement by sand models
 methods 137–8
 results 138–45
 results discussed 143–5
 causes 281–2
 defined 97, 137
 mechanics 4–9
 controlling factors 39–40
 inherited controls 40–5
 role of transpression 45–7, 47–53, 53
- Irish Sea
 porosity depth variation 23
 seismic reflection profile 26
 Tertiary erosion 24
 thermal history 155–6
 vitrinite reflectance 23
- Iroquois Formation 253, 254
- Isalo Formation 469
- isostatic rebound, role in inversion 281
- Jeanne d'Arc basin
 setting 249–50
 structural architecture 250–4
 basement step 254–5
 Cormorant anticline 254
 NW-SE faults 255–8
 tectonic history
 age of deformation 263–8
 stages of extension 259–63
- Jura Platform pinched structures 340–3
- Jurassic events
 Bass basin development 526
 Cardigan Bay 589
- K/Ar dating 459
- Kaikoura orogeny 549
- Karamea basin 554, 565
- Karamea terrane 551
- Karoo sediments 469
- Kenya 469

- Keuper Marl 396, 397, 435
 keystone faults 504–5
 Khartoum basin 469
 Kilve 356, 362, 374
 fault study 397–405
 Kimmeridge Bay, seismic reflection profile 27
 Kimmeridge Clay Formation
 biomarker maturity 179
 exhumation and sonic velocity 171, 174
 Kingscourt, seismic reflection profile 26
 Kish Bank, seismic reflection profile 26
 Kyokpo basin
 evolutionary history 467–9
 stratigraphy 457–63
 structure 463–4
 uplift and inversion 464–7
- Lahewa sub-basin 478–80, 481
 Lavernock Point 387
 Lifeng Formation 495
 Ligurian Ocean 415
 Lilstock Formation 396, 397
 listric faults 8, 505
 analogue modelling of inversion 101–6
 inversion behaviour 138–41, 143–5
 Liulang Formation 495
 Lomos de Olmido rift 53, 54
 Lonco Trapial Group 238, 239
 Longjing Formation 495
 Lower Saxony basin 87
 Lustleigh fault 355, 356
- Madagascar 469
 Magallanes basin 211
 magmatism, Tertiary of UK 29–33
 Magnus fault 291
 Malay basin 85, 88
 mathematical modelling 184–7
 maturity studies
 Bristol Channel basin 387–8
 UKCS 182–3, 203
 Melville basin 173, 177, 192, 193
 Mercia Mudstone 396
 apparent exhumation data 199, 201
 depth data in Celtic Sea/SW Approaches 196,
 197
 exhumation and sonic velocity 171, 174
 interval transit time/depth plots 198
 Minyuefeng Formation 495
 migration studies 388–9
 montmorillonite and frictional fault
 reactivation 4–5
 Montsec thrust sheet 415, 417
 Moray Firth (Inner)
 burial-uplift studies 171, 172
 porosity-depth variation 23
 sonic velocity results 175
 structural elements 173, 174
 tectonic modelling 184–7
 thermal history 158–9
 vitrinite reflectance 23
 Morocco basins 48–52
 Morondava basin 469
 Morreras backthrust 415, 417
 Mother Lode vein system 14–15
 Mujoi sub-basin 478–80, 481
 Murre fault 259, 264
 Muschelkalk 311, 435
- Nash Point 356, 356, 358, 365, 378
 negative inversion 97, 137
 neptunian dykes 358
 Neuquén basin 211, 212
 chronostratigraphy 229
 setting 221–4, 230
 traps 224–7
 Newfoundland *see* Jeanne d'Arc basin
 New Zealand
 South Island 549–54
 deformation modelling 580–2
 extension timing 570–1
 inversion structures
 field analysis 574–80
 map view 571–4
 seismic analysis 561–70
 seismic studies 558–9, 559–60
 stratigraphy 555–8
 Taranaki basin 4, 150–3
 Nias Island *see* Indonesia
 Nigeria 91, 469
 Nordadler Kamien fault 320, 324, 325, 331
 normalized drilling rate and burial evidence
 168, 178–8
 Noroeste (Oran) basin
 chronostratigraphy 229
 setting 212, 214–17, 230
 traps 217
 North Rona, seismic reflection profile 25
 North Sea basin 84, 91
 rifting compared with Suez rift 73–80
 North Sea (North) *see* East Shetland basin
 North Sea (South)
 inverted extensional fault systems 99, 100
 thermal history 153–5
 uplift and tectonic modelling 184–7
 uplift/exhumation studies by sonic velocity
 lithology effects 171–5
 results 175–7
 role in hydrocarbon generation 182–4
 theory of method 168–71
 timing of uplift 179–82
 Northern Tern fault 284, 287, 288
 Nubian Sandstone Formation 59, 61, 64, 65, 68
 Nukhul Formation 59
- Ogof Gynfor fault 13

- Okinawa Trough basin 494
 Olangolah well, use in thermal history reconstruction 160
 ophiolites 474–8
 Oran basin *see* Noroeste basin
 Organyá basin 415, 416–23
 Otway basin 525, 526, 527
 thermal history 160–1, 163
 Otway Ranges, thermochronology 528–9
 Oujiang Formation 495
 overcompaction 168
 Oyo Complex 473
- Paparoa basin 561, 562
 Paparoa Coal 551, 555
 particle displacement paths 103–5, 107–8
 Pematang Formation 43
 Pembroke ridge 173, 177, 192
 Penarth Group 396
 Penarth Head 356, 357, 360, 373
 Penguin ridge
 kinematics 295
 seismic information 294–5
 setting 290–1
 structure 291–4
 Pennine Axis thermal history 156–8
 Perales anticline 243, 244
 permeability 9–10, 376–82
 Permo-Triassic events
 Bristol Channel rifting 383, 410–11
 Cardigan Bay 589
 Pikikiruna fault 574, 577, 580
 pinched structures 340–3
 Pinghu Formation 495
 planar faults, analogue modelling of 106
 plate motion, role in inversion of 282
 Plymouth Bay basin 173, 177, 192, 193
 Pobie fault 284
 Porcupine basin 23
 Pororari Group 551
 porosity 376–82
 Posidonia Shale 311
 positive inversion 97, 137
 factors affecting 128–9
 measurement with clay models
 methods 122
 results 125–8
 results discussed 129–34
 measurement with sand models
 methods 137–8
 results 138–42
 results discussed 143–5
 Pozo D–129 Formation 238, 239, 241
 Pyrenees *see* Boixols thrust sheet
- ramp-flat listric faults
 analogue modelling of inversion 106–9
 inversion behaviour 141–2, 143–5
- Rangitata orogeny 549
 rare earth element profiles 29–31
 reverse faults 8
 Reefton coalfield deformation measurements 578–9, 580
 restorations and fold growth
 methods 506–12
 results 513–16
 results discussed 516–20
 Rhaetian Bone Beds 397
 Rhoose Point 356, 359, 360, 361, 364, 374
 Riedel shears 359, 364
 rift studies
 classification 83–9
 events
 Anza rift 469
 Bass basin 526–8
 Baltic Sea 324–9
 Bristol Channel basin 357–61, 369–74, 383–4, 410–11
 Gulf of Suez 59–69
 Lomos de Olmido 53, 54
 North Sea 73–80
 Ronne graben 320, 323, 324, 325, 326
 rotation, relation to inversion of 501–4
 Rotliegend Sandstone 183
 Russian basins 84, 86, 91
- Sabah seismic section 42
 sag basin style 40
 Saharan Atlas basin 91
 St Audrie's Bay 356, 360, 362, 373, 374
 St Donats 356, 365, 378
 St Joseph structure 42
 St Mary's basin 173, 177, 192, 193
 St Mary's Well Bay 356, 364
 Sakamera Formation 469
 Sakoa Formation 469
 Sallent syncline 423, 424
 salt structures, role in uplift 175
 San Bernardo fold belt 245–6
 San Jorge basin 211, 227, 229, 230
 inversion history
 method of analysis 239
 results 239–45
 results discussed 245–7
 setting 235–9
 Sant Corneli–Boixols–Nargo anticline 418, 423
 Santa Fe syncline 418, 423, 424, 426
 Santan Formation 495
 shear angles, extension v. inversion 113
 Shimentan Formation 495
 shortening, lithospheric 28–9
 Sirte basin 84, 88, 91
 Sker Point 356, 361
 Skurup Platform 324, 326
 Sleen Formation 311
 slickolites 360

- Sole Pit axis thermal history 153–5
 Sole Pit basin 86, 88
 Songliao basin 85
 sonic velocity and burial evidence
 method 168–71 193–5
 results 200–2
 interval transit time relations 197–200
 lithology effects 171–5
 stratigraphy effects 185–7, 195–7
 study areas
 North Sea 175–7
 Scandinavia 179
 UKCS 178–9
 Sorgenfrei Tornquist Zone 320, 321
 Sorrell fault zone 526, 527
 South Hewett fault zone 99
 South Korea *see* Kyokpo basin
 South Sumatra basin 85, 91
 Southern Tern fault 288
 Southwestern Approaches (SWA)
 burial/exhumation studies 171, 172, 203–5
 exhumation role in hydrocarbon generation
 203
 exhumation studies by sonic velocity 176, 179
 interval transit time/depth relations
 197–200
 methodology 193–5
 results discussed 200–3
 significance of stratigraphy 195–7
 regional setting 192, 193
 structural elements 173, 174
 tectonic modelling 184–7, 205–6
 Spain
 Almazán basin 440
 see Boixols thrust sheet 415–16
 Cameros basin 434–5
 evolutionary history 448–51
 metamorphism 439
 setting 434–5
 stratigraphy
 Jurassic–Cretaceous 435–9
 Late Cretaceous 439
 Triassic–Jurassic 435
 structure 441–6, 447–8
 Ebro basin 415, 416, 440
 Sticklepath–Lustleigh fault 355, 356
 stress field
 fault reactivation 4–5, 7
 mean stress effect 11–12
 measurement in Bristol Channel basin 374
 stretching factors 23
 strike-slip faults
 Bristol Channel 364–9, 375–6, 389, 412
 Kyokpo basin 463–4
 role in inversion 47–53
 stylolites, effect on permeability of 10
 subsidence curves 23
 Sudan 469
 Sumatra 85, 91
 Nias Island *see* Indonesia
 Sunda Arc 43, 99, 469, 473
 Sumbawa, plate setting 473
 Sunda Arc 43, 99, 469, 473
 Takaka terrane 551
 Taramakau anticline 561, 562
 Taranaki basin 4, 150–3
 tectonic modelling
 Celtic Sea 184–7, 205–6
 East China Sea 501
 East Midlands Shelf 184–7
 East Shetland basin 297–300
 Moray Firth (Inner) 184–7
 North Sea (South) 184–7
 South Western Approaches 184–7, 205–6
 Teisseyre Tornquist Zone 320, 321
 Tern ridge 282
 Tern sub-basin
 kinematics 289–90
 seismic information 286–9
 setting 282
 structure 282–6
 Terra Nova arch 265, 266
 Tertiary 21–3, 27–9
 exhumation/uplift studies in UK
 burial depth significance 203–5
 causes of UK uplift 27–9
 interval transit time/depth relations
 197–200
 measures of UK uplift 21–3
 results, Celtic Sea/SW Approaches 200–3
 role in hydrocarbon generation 182–4,
 203
 tectonic modelling 184–7, 205–6
 timing 179–82
 use of sonic velocity
 continental shelf results 178–9
 lithology effects 171–5
 North Sea results 175–7
 stratigraphic effects 185–7, 195–7
 theory of method 168–71, 193–5
 inversion in UK basins
 Bristol Channel 385–7
 Cardigan Bay 589
 magmatism in UK 29–33
 non-UK studies
 Almazán stratigraphy 440
 Alpine Foreland deformation 56
 Bass basin development 527–8
 Boixols thrust sheet 421–3
 Cameros basin inversion 450–1
 East China Sea structure 510–14
 Ebro basin stratigraphy 440
 Kyokpo sediments 468
 New Zealand 551
 Nias Island 478–89

- Tertiary—*cont'd*
 Scandinavia 179
 Western Alps thrust 339–40
- Thebes Limestone Formation 61
- thermal histories (subsidence and uplift) 28, 149–50
 Bass basin 527–9
 East Midlands Shelf 153
 Irish Sea 155–6
 Jeanne d'Arc basin 260–1
 Moray Firth (Inner) 158–9
 North Sea (South) 153–5
 Otway basin 160–1
 Pennine Axis 156–8
 Taranaki basin 150–3
- thrusts and thrusting 8, 135
see Boixols thrust sheet
 Bristol Channel basin 361–2, 374–5
 Kyokpo basin 464–5
 Western Alps thrust sheet 339–40, 340–5
- Timan–Pechora basin 86, 91
- Tor Formation 171, 174
- Tornquist Zone 321
- transpression
 Jeanne d'Arc basin 261–3
 role in inversion 45–7, 53
- trap formation and style
 Bristol Channel basin 388–9
 Cuyo basin 220–1
 Neuquén basin 224–7
 Noroeste basin 217
 San Jorge basin 227
- Triassic events
 Bristol Channel rifting 383–4
 Jeanne d'Arc basin 253, 259
 Boixols sheet 416–21
 Cameros stratigraphy 435
see also Permo-Triassic
- Trwyn-y-Witch 356, 360, 361, 362, 363, 368, 374
- UK Continental Shelf (UKCS) 178–9
 underplating 33–4, 281
 underthrusting, role in inversion of 55–7
 Unita Mountains (Utah) 53
 Unst seismic reflection profile 25
 uplift, Tertiary of UK 21–5, 27–9
see also exhumation
- Utrillas Formation 439
- valve action of faults 13–14, 16, 389
- Variscan events, Cardigan Bay basin 589
- veins, extension 364, 365, 366, 377–82
 barite 360, 369–73
 calcite 359–60, 362, 373
 gypsum 360
- Viking Graben 88
- vitrintite reflectance
 Bristol Channel basin 387
 Kyokpo basin 467
 Nias Island 481
 Otway Ranges 528–9, 535
 role in maturity calculations 182–3
 role in thermal history reconstruction 150
 East Midlands Shelf 153
 Moray Firth (Inner) 158–9
 Otway basin 160
 Taranaki basin 151–2
 use for burial evidence 168, 178–9
- Vocotian basin 344
- volcanism 458
- Voyager fault 264, 265, 266–8
- Wadi Baba 65–7
 Wadi Feiran 68, 75, 76, 77
 Wadi Sidri 68, 74
 Wadi Tayiba 62–5
 Walls Boundary fault 284
 Warren Bay 401
 Watchet 356, 357, 361, 362, 363, 364, 374
 Watchet fault 355, 356, 364, 393, 394, 400, 404, 405
- Weald basin 4
- Werkendam Formation 311
- Wessex basin 4, 87, 88, 387
- West Netherlands basin 87
- West Penguin fault 293, 294
- West Shetlands fault 284
- West Siberia basin 84, 91
- Westbury Formation 396, 397
- Western Alps external thrust belt
 basement massifs 343–4
 Devoluy massif 344–5
 Jura platform 340–3
 setting 339–40
- Wick fault 173, 175
- Worcester basin 383
- Wyville–Thomson ridge 28
- Yuquan Formation 495
- Zechstein Group 311
- Zhe-Min uplift 494