

Name Index

- Abramowitz, M., 12, 145, 146, 150, 152, 159,
 160, 163, 188, 310, 467
 Akilov, G. P., 61, 371, 385, 388
 Angell, T. S., 98, 109, 112, 140
 Aranha, J. A. P., 224, 230
 Athanassoulis, G. A., 141, 434
 Aubin, J.-P., 105

 Baar, J. J. M., 317
 Bai, K. J., 113
 Banerjea, S., 98, 213
 Barber, N. F., 6
 Bauer, 316
 Beale, J. T., 6, 10
 Bessho, M., 316, 416, 418
 Bhattacharya, R. N., xii
 Birman, M. S., 106, 225, 257
 Bochner, S., 39, 314
 Bolton, W. E., 218
 Bonnet–Ben Dhia, A.-S., 220, 223, 229
 Bouligand, G., 433
 Brard, R., 16, 418
 Burago, Yu. D., 96
 Buslayeva, M. V., 433

 Callan, M., 256
 Carleman, T., 65, 96, 103, 375
 Cauchy, A. L., xi
 Chabat, B. V., 230, 235
 Chudinovich, I. Yu., 433
 Clarisse, J.-M., 317, 433
 Colton, D., 53, 96
 Courant, R., 22
 Crapper, G. D., xi
 Cross, R.H., 14

 Davies, E. B., 256
 Davis, A. M. J., 141
 Dean, R. G., 6

 Debnath, L., xii, 5
 Dern, J. C., 360
 Dobrokhotov, S. Yu., 433
 Doppel, K., 98, 141

 Eatock Taylor, R., 256
 Eggers, K. W. H., 316, 416
 Ehrenmark, U. T., 223
 Euler, L., xi
 Euvrard, D., 316, 434
 Evans, D. V., xvii, 49, 98, 212–214, 216,
 220–222, 229, 231–233, 255–258,
 260–262

 Fedoryuk, M. V., 291
 Fernyhough, M., 232, 262
 Feshbach, H., 193, 206
 Feynman, R. P., xi
 Fitz-Gerald, G. F., 97
 Fox, D. D., 105
 Friedman, A., 432
 Friis, A., 141

 Garipov, R. M., 230, 235, 432, 433
 Gilbarg, D., 59, 90, 118, 140, 423, 424, 429
 Gohberg, I., 55, 359
 Gradshteyn, I. S., 12, 24, 25, 27, 35, 36,
 40–42, 65, 131, 146, 182, 310, 314, 315,
 374, 406, 407, 451, 466
 Greenspan, H. P., 222
 Grimshaw, R. H., 97, 220, 227, 228, 234
 Groves, M. D., 218
 Grue, J., 141
 Gutmann, C., 359

 Hadamard, J., 433
 Hamdache, K., 17
 Haskind, M. D. (Khaskind), xii, 48, 359
 Havelock, T. H., xi, 48, 238, 239, 316, 417

- Hazard, C., 14, 98
 Hearn, G. E., 110
 Hermans, A. J., xii, 418
 Hilbert, D., 22, 55, 62, 257, 422
 Hille, E., 254
 Hochmuth, R., 141
 Hogner, E., 316
 Hou, T. Y., 6
 Hsiao, G. C., xii, 98, 109, 112, 141, 418
 Hulme, A., 48, 76, 97
 Hurd, R. A., 262
- Isakova, E. K., 433
- Jami, A., 98, 434
 John, F., xi, xiv, 5, 8, 10, 48, 99, 100, 116, 117, 120, 121, 126, 134, 136–140, 143, 164, 176, 177, 179, 180, 189–192, 195, 205, 208, 231, 238–242
 Joly, P., 220, 223, 229
 Jones, D. S., 113, 217, 229, 230
- Kakilis, P. D., 141
 Kamotskii, I. V., 256
 Kantorovich, L. V., 61, 371, 385, 388
 Keldysh, M. V., 317
 Keller, J. B., 227, 417
 Kellogg, O. D., 53, 56, 96, 357
 Kelvin, Lord (Sir W. Thomson), xi, xiv, 265, 283, 316
 Kenig, C. E., 96
 Kirchgässner, K., 5
 Kirchhoff, G. R., xi
 Kleinman, R. E., 98, 109, 110, 112, 113, 141
 Kochin, N. E., xi, 48, 51, 55, 87, 96, 316, 317, 359, 360
 Komech, A. I., 219, 220, 222, 223
 Kondratyev, V. A., 96, 101, 364
 Kopachevskiy, N. D., 105
 Korobkin, A. A., 433
 Kostyukov, A. A., xii, 316, 317, 359, 360, 418
 Kozlov, V. A., 55, 62, 92, 96, 101
 Král, J., 96
 Krein, S. G., 55, 105, 359
 Kreisel, G., 97
 Kress, R., 53, 96
 Kuttler, J. R., 105
 Kuz'mina, V. M., 433
 Kuznetsov, N. G., 97, 140, 141, 192, 212–214, 216, 231, 237, 241, 359, 405, 415, 416, 484
- Lagrange, J. L., xi
 Lahalle, D., 359
 Laitone, E. V., xi, xvi, 5, 48, 227, 315, 316, 359, 360, 418
 Lamb, H., xi, 2, 3, 214, 437
 Lau, S. M., 110, 432
 Lavrentiev, M. A., 230, 235, 317
 Le Méhauté, B., 2
 Lee, S. W., 110, 262
 Lehman, R. S., 220
 Lenoir, M., 14, 48, 98, 141, 317, 416
 Leppington, F. G., 141
 Lesky, P. H., 218
 Levi-Civita, T., 5
 Levine, H., 171
 Levitin, M., 256, 257
 Lewy, H., 220
 Le Blond, P. H., 214
 Le Méhauté, B., 6
 Liapis, S., 110
 Licht, C., 10, 14
 Lighthill, M. J., xi
 Linton, C. M., xii, xvii, 98, 192, 213, 228, 231, 232, 255, 260–262
 Liu, Y. W., 113
 Livshits, M. L., 97, 359
 Lowengrub, J. S., 6
 Ludwig, D., 141
- Makrakis, G. N., 434
 Mandal, B. N., 98, 213
 Maniar, H. D., 256
 Martin, P. A., 114, 115, 140, 141, 232
 Maskell, S. J., 434
 Maz'ya, V. G., 48, 49, 54, 55, 62, 92, 96–98, 101, 165, 169, 213, 231, 235, 283, 316, 317, 359, 415, 416, 433, 484
 McIver, M., xvii, 98, 116, 141, 212, 228, 256, 261
 McIver, P., xii, xvii, 15, 141, 212, 213, 220, 229, 231–233, 238, 239, 255, 256
 Mei, C. C., xii
 Merzon, A. E., 220, 222, 223, 227
 Meyer, R. E., 227
 Michell, J. H., 417
 Mihlin, S. G., 53, 55, 56, 96, 357
 Miles, J. W., 227
 Mittra, R., 262
 Moiseev, N. N., 105
 Morris, C. A. N., 49

- Morse, M., 193, 206
 Motygin, O. V., xvii, 213, 234, 238, 359, 405, 415, 416
 Mysak, L. A., 214, 215
- Nachbin, A., 484
 Nakos, D. E., 417
 Nalimov, V. I., 7
 Nazarov, S. A., 96, 101, 256, 484
 Nekrasov, A. I., 5
 Newman, J. N., xii, xvi, 15, 17, 212, 213, 256, 311, 316, 317, 433
 Ngo Zuy Can, 105
 Noblesse, F., 316
- Olver, F. W. J., 5, 42
 Ovsyannikov, L. V., xii, 5, 7
- Packham, B. A., 222
 Paganì, C. D., 360, 417
 Palm, E., 141
 Papanicolaou, G. C., 484
 Parker, R., 258
 Parnowski, L., 256
 Parsons, N., 232
 Peters, A. S., 16, 221, 316
 Petrovski, I. G., 63, 254, 321, 357
 Pierotti, D., 360, 417
 Pinkster, J. A., 15
 Plamenevsky, B., 96, 101
 Plamenevsky, B. A., 484
 Poisson, S., xi
 Politis, C. G., 141
 Porter, D., xvii, 98, 212, 213, 231, 256
 Price, W. G., 317
 Protter, M. H., 228
 Prudnikov, A. P., 41, 451
- Quenez, J.-M., 360
- Radon, J., 96
 Reed, M., 225
 Rhodes-Robinson, P. F., 141
 Roach, G. F., 113, 141
 Rodemich, E., 171
 Roseau, M., 212, 221, 223
 Rosenblat, S., 218
 Rossmann, J., 92, 96, 101, 166, 169
 Ryzhik, I. M., 12, 24, 25, 27, 35, 36, 40–42, 65, 131, 146, 182, 310, 314, 315, 374, 406, 407, 451, 466
- Sabatier, P. C., 484
 Sanchez-Palencia, E., 107, 140
 Schomburg, B., 98, 141
 Sclavounos, P. D., 110, 417
 Shaposhnikova, T., 433
 Sharma, S. D., 316
 Shen, M. C., 98, 227
 Shinbrot, M., 432
 Simon, M. J., xvii, 97, 124, 140, 213, 225, 238, 241, 382
 Sollitt, C. K., 14
 Solomyak, M. Z., 106, 225, 257
 Sretensky, L. N., xi, 49
 Staziker, D. J., 98
 Stegun, I. A., 12, 131, 145, 146, 150, 152, 159, 160, 163, 188, 190, 310, 467
 Stoker, J. J., xi, xvi, 2, 3, 5, 16, 17, 316, 421, 437, 443, 449, 465, 478
 Stokes, G. G., xi, 159, 160, 189, 214, 215, 219–221, 227, 241
 Stoneman, S. A. T., 258
 Struik, D. J., 5
 Sun, S. M., 227
 Suzuki, K., 416
- Thoe, D. W., 254
 Thorne, R. C., 48
 Timman, R., xii, 418
 Tolstova, O. L., 433
 Tounsi, A., 141
 Troesch, B. A., 143, 212
 Trudinger, N. S., 59, 90, 118, 140, 423, 424, 429
 Tuck, E. O., 316, 415
 Tulin, M.P., 415
- Ursell, F., xi–xiii, xvii, 6, 97, 98, 113–115, 124, 140, 141, 218, 219, 221, 226, 227, 229–234, 238, 245, 255, 283, 287, 316, 317, 382, 397, 407, 416, 433, 434
 Utsunomiya, T., 256
- Vainberg, B. R., 49, 96–98, 231, 235, 283, 291, 316, 317, 359
 Vassiliev, D., 256, 257
 Vladimirov, V. S., 53, 55, 56, 96, 357
 Vullierme-Ledard, M., 10, 433
- Watson, G. N., 36, 41, 484
 Weck, N., 97

- | | |
|---|----------------------------------|
| Wehausen, J. V., xi, xii, xvi, 5, 48, 227, 315,
316, 359, 360, 418 | Wilcox, C. H., 261 |
| Weinberger, H. F., 228 | Williams, W. E., 222 |
| Weinblum, G., 416, 418 | Wu, G. X., 98 |
| Weinstein, A., 46, 48 | Yeung, R. W., 113 |
| Werner, P., 140 | Yu, Y. S., 6 |
| Whitehead, E. A. N., 262 | Zachmanoglou, E. C., 254 |
| Whitham, G. B., xi, 221 | Zargaryan, S. S., 97 |
| Whittaker, E. T., 36, 484 | Zhevandrov, P. N., 223, 227, 433 |
| Wienert, L., 110, 111 | |

Subject Index

- Acceleration caused by gravity, 1, 2, 87, 265, 266, 349, 393, 422, 439
 Airy function, 283, 286, 287, 293, 297
 Artificial boundary, 224, 225
 Assertion on continuity of solutions, 53
 Asymptotic
 behavior, 21, 22, 27, 32, 39, 42, 117, 148, 152, 171, 188, 266, 283, 284, 287, 289–291, 295, 303, 314, 316, 319, 332, 404, 407, 433, 468, 487, 491
 formula, 12, 28, 41, 46, 66, 67, 69, 96, 181, 227, 283, 286, 309, 311, 317, 320, 324, 325, 327, 329–335, 341–343, 350–352, 364–366, 376–378, 394, 397, 412, 435, 438, 443, 460, 461, 464, 475, 481, 483
 representation, 283
 Asymptotic behavior, 28
 Asymptotics
 at infinity, 25, 327, 341, 343, 362, 379, 381
 Auxiliary integral identity, 70, 134, 135, 231, 234
 Axisymmetric
 problem, 97, 122, 130, 140, 142, 143, 158, 212, 213
 structures, 162
 Azimuthal mode, 143, 163, 164, 188, 189, 212, 213
 A priori estimate, 90

 Banach space, 60, 62, 292, 370
 Barrier, 98, 164, 165, 170–172, 213, 260, 262, 488, 489, 493, 495
 Beam, 417
 Bernoulli's equation, 3, 436
 Bessel function, 12, 25, 26, 41, 132, 133, 159–161, 163, 186, 188, 231, 232, 259, 502
 Bipolar coordinates, 201
 Bottom, 1, 5, 9, 11, 42, 49, 50, 54, 58, 68–71, 78, 80, 81, 88, 92–95, 97, 98, 112, 117, 121, 124–126, 134, 137, 139, 156, 165, 169, 173, 175, 185, 192, 198, 199, 202, 203, 212, 215–217, 219, 220, 224–227, 230, 231, 234, 235, 241, 256, 261, 325, 341, 344, 350, 352, 360, 412, 413, 421, 432, 433, 455, 487, 488, 503
 Bottom condition, 352
 Bottom movement, 435, 439, 455
 Boundary conditions, 3, 5, 43, 44, 46, 54, 69, 88–90, 94, 105, 118, 139, 171, 214, 230, 312, 344, 348, 361, 362, 416, 488, 491
 Cauchy's inequality, 167, 174
 Cauchy–Poisson problem, 4, 7, 433, 460, 477, 487, 491
 Cauchy–Riemann equations, 338, 348, 368–370
 Cauchy principal value, 23, 34, 39, 306, 312
 Cauchy problem for the Laplace equation, 59, 169, 326, 348, 380, 402, 413, 414
 Circular cylinder, 43, 49, 97, 229, 231, 255, 256, 258, 318, 337, 397, 416, 483, 486, 495, 500, 501
 Circulation, 16, 360, 365, 398
 Cliff, 156, 197, 220, 225, 226
 Comparison method, 228
 Complete elliptic integral, 41
 Complex potential, 307, 434
 Condition of the Kutta–Zhoukovsky type, 416
 Continuity equation, 2, 436
 Corner point, 51, 60–63, 65–67, 170, 171, 362, 403
 Cutoff, 233, 236, 238–241, 244, 249, 255, 258, 496
 Cutoff function, 278, 366
 Cylindrical wave, 12, 37

- Deep water, 11, 12, 15, 16, 21, 37, 39, 40, 42, 46, 48, 68, 69, 76, 80, 121, 124–127, 130, 143, 158, 175, 185, 192, 204, 205, 211, 213, 229, 230, 232, 239, 241, 255, 265, 305, 316–318, 351, 353, 359, 362, 398, 411, 412, 415, 450, 451, 466, 495, 500
- Dipole, 177, 178, 180, 239, 407
- Dirac's measure, 21, 22, 94, 281, 313, 459, 475
- Direct integral equation, 54
- Dirichlet–Neumann operator, 104, 106, 107, 426
- Divergence theorem, 14, 23, 70, 103, 228, 234, 239, 351
- Dynamic boundary condition, 3
- Edge waves, 214–216, 219, 220, 222, 226, 227, 229, 233, 255, 262, 488–490, 497, 501, 502
- Ellipse, 76, 77, 126
- Energy, 4, 5, 13, 60, 71, 72, 101, 102, 105, 118, 142, 144, 166, 202, 208, 213, 217, 219–222, 227, 229, 232, 237, 318, 327, 390, 405, 438, 439, 442, 443, 446, 456, 457, 460, 465–467, 481
- Energy conservation law, 443, 449, 457, 465
- Energy norm, 446, 473
- Error function, 451, 467
- Essential norm, 62, 65, 103, 108, 371, 373, 387
- Euler's constant, 151, 310
- Exponential integral, 150, 406
- Extended auxiliary integral identity, 135, 198, 241
- Floating body, 6, 156, 434, 485, 488, 492, 496, 501
- Flow of energy, 13
- Forward speed, 265, 349, 361, 393, 395, 417, 490, 501
- Fourier
 coefficients, 462, 476, 482, 483
 transform, 21, 24, 48, 141, 223, 268, 269, 274, 280–282, 313, 317, 423, 425, 450, 465, 473, 474, 480, 489
- Fredholm
 operator, 62, 373
 theory, 58, 59
- Fredholm's alternative, 50, 58, 61, 87, 103, 108, 358, 371, 373, 375, 387, 388, 399, 415
- Free surface, 397
- Free surface, 1, 3–5, 7, 9–11, 15, 17, 22, 39, 42, 48–50, 54, 56, 69, 70, 87, 88, 92–95, 99, 100, 105, 112, 113, 116, 117, 123–126, 130, 131, 134, 136, 137, 139, 142–145, 157, 162–165, 169–173, 177, 179, 185, 188–191, 193, 196, 198, 203, 205, 208, 209, 212, 215–217, 219, 224, 231, 232, 234, 238, 239, 241, 244, 245, 248, 249, 252, 261, 265–267, 283, 287–289, 309, 311, 316, 344, 349, 358, 363, 364, 370, 403, 407, 410, 412, 417, 421, 422, 426, 432, 433, 435–437, 442, 443, 451, 455, 456, 460, 464, 465, 468, 486, 490–492
 boundary condition, 8, 17, 31, 41, 52, 70, 72, 112, 130, 169, 177, 185, 274, 342, 356, 367
 elevation, 4, 7, 365, 370, 442, 443, 455, 456, 459, 468, 479
- Galerkin approximation, 262
- Gamma function, 292
- Geometric criteria of uniqueness, 50
- Green's
 formula, 51, 69, 92, 101, 103, 106, 122, 124, 127, 166, 167, 324–326, 330, 352, 366, 367, 379, 383, 388, 400, 428, 449, 456, 481
 function, 21–25, 28, 30, 32, 33, 36–40, 42, 43, 48–50, 52, 90, 93, 100, 105, 109–114, 139, 177, 232, 233, 245, 253, 265–268, 280, 283, 284, 305, 308, 309, 311, 312, 314–320, 324, 326, 327, 343, 349, 353, 354, 356, 359, 366, 370, 376, 378, 380, 381, 385, 389, 415
 representation, 21, 48, 109–112, 116, 319, 417
- Half-axis, 56, 83, 142, 147, 149, 150, 184, 245, 270, 274, 297, 313, 407, 409
- Half-plane, 38, 66, 114, 177, 194, 200, 209, 232, 237, 270, 283, 287, 306, 307
- Half-space, 22, 32, 185, 206, 273, 281, 286, 287, 436, 473
- H function, 359
- Hankel function, 12, 13, 36, 131, 159
- Harmonic function, 22, 24, 33, 43, 46, 47, 52, 53, 62, 67, 107, 124, 130, 138, 144, 148, 157, 177, 178, 253, 308, 312, 337, 338,

Subject Index

511

- 347, 357, 368, 380, 383, 392, 407, 424, 425, 460
- Heaviside function, 147, 267, 309, 312, 313, 342, 347, 365
- Helmholtz equation, 117, 255, 491, 503
- Hilbert space, 446, 486, 489
- Hypersingular operator, 109, 110, 112
- Impulsive pressure, 433, 435–438, 448, 451
- Initial-boundary value problem, 10, 14, 17, 421, 422, 433, 435, 441, 444, 447, 454, 459, 461, 463, 466, 472, 475, 477, 480
- Initial conditions, 7, 9, 437, 441, 442, 445, 454, 455, 457, 464, 477
- Integral
 equation, 50–61, 65, 87, 88, 96, 98–100, 102–104, 107, 109–113, 115, 116, 121, 122, 232, 233, 255, 262, 318, 321–323, 331–333, 336, 341, 345–348, 357–359, 370, 375, 380, 399, 417, 485, 487, 491, 492, 494–496, 499, 501, 502
 operator, 50–52, 54, 61, 64, 90, 100, 103, 109, 111, 112, 232, 318, 321, 333, 357, 359, 399, 492
- Integroalgebraic system, 370–372, 377, 380, 385–387, 399, 404, 415
- Inverse procedure, 158, 212, 361, 406, 417
- Invertibility theorem, 55, 61, 62, 65, 96, 101, 103, 321, 323, 359, 373, 377, 399
- Irregular frequency, 140, 494
- Jacobian, 89, 200, 210
- Jump formula, 311, 322, 332, 337
- Kelvin's angle, 283, 285, 287, 288, 291, 295, 316
- Kelvin's source, 283, 316
- Kinematic boundary condition, 4
- Kinetic energy, 4, 68, 105, 116, 165, 167, 173, 177, 186, 196, 362, 363
- Knife-like ship, 417
- Kronecker delta, 40, 46, 71, 186, 234
- Laplace equation, 3, 24, 34, 41, 46, 47, 50, 70, 72, 88, 96, 118, 119, 167, 185, 216, 274, 281, 339, 356, 357, 362, 436, 462, 476
- Layer of variable depth, 49, 70, 83, 85, 87, 97, 436, 502
- Least singular solution, 397, 416
- Linearization, 6–8
- Line source, 21, 244, 305, 317
- Lipschitz condition, 71, 253, 254
- Local asymptotics, 170, 362, 366, 403, 411
- McIver toroid, 498
- Mean value theorem, 22, 47, 148
- Method of stationary phase, 290, 291, 296–298
- Mittag-Leffler's theorem, 36
- Modified Green's function, 113, 115, 491
- Moon pool, 212
- Neumann–Kelvin problem, 16, 283, 284, 311, 313, 318, 319, 323, 324, 326, 337, 341, 342, 347, 349, 358–362, 395, 397, 398, 403, 405, 406, 411, 416, 417, 487, 493, 497, 498, 500, 501
- Neumann condition, 8, 52, 53, 56, 58, 59, 61, 66, 69, 74, 92, 94, 95, 102, 105, 107, 112, 139, 142, 145, 160, 167, 216, 261, 330, 333, 342, 346, 347, 356, 364, 380, 384, 400, 403, 406, 449, 460, 462, 482
- Nodal line, 138–140, 146, 148–156, 161, 179–181, 407, 410
- Normal velocity, 4, 5, 9
- No-flow condition, 3, 145, 341, 352, 363, 395, 412, 413
- Null-field equations, 115, 495, 496
- Obstacle, 4, 14, 21, 44, 50, 51, 65, 68, 98, 116, 121, 122, 125, 126, 142, 144, 169, 216, 231, 256, 421, 493, 495, 496
- Parseval's equality, 423, 426, 466
- Parseval theorem, 474
- Pascal's snail, 402
- Perturbation procedure, 7, 17
- Piecewise smooth contour, 61, 65, 127
- Point source, 21, 40, 48, 52, 265, 353
- Poisson's equation, 385, 415
- Potential energy, 4, 68, 97, 117, 122, 165, 166, 170, 173, 177, 196, 209, 210, 239, 241, 436, 456
- Pressure, 1–3, 87, 88, 218, 316, 349, 393, 435–437, 439, 440, 442, 443, 450, 451, 455, 460, 461, 464, 467, 468, 487
- Progressive wave, 12, 13, 49

- Radiation condition, 13, 14, 16, 25, 28, 31, 41, 42, 44–46, 54, 89, 94, 95, 118, 159, 167, 170, 245, 343, 381, 391
- Rate of flow, 320, 365, 370, 394, 398
- Rayleigh–Bloch wave, 256
- Rayleigh quotient, 257
- Ray theory, 417
- Regular normal derivative, 52, 58, 61, 102, 323
- Rellich's radiation condition, 42
- Residue theorem, 184, 270, 273
- Resistance, 311, 351, 353, 361, 393–396, 402–404, 415–417, 498
- Resistanceless potential, 404, 406, 415, 493
- Riesz theorem, 425
- Rigid body, 10, 15, 17, 143, 155, 157, 351, 353, 436, 499
- Ring source, 21, 40
- Ring Green's function, 40–42, 48
- Ring source, 159, 163, 190, 191
- Roseau's method, 221
- Runge–Kutta scheme, 246
- Schwarz inequality, 31, 106, 117, 119, 120, 123, 128, 132, 139, 168, 174, 186, 187, 194, 236, 348, 384, 414
- Semisubmerged body, 99, 500
- Shallow water, 265, 305, 311, 313, 317, 318, 346, 349, 359, 415, 417, 501
- Shell, 164, 165, 169, 213, 493
- Ship wave, 265, 316, 318, 417, 486, 490–492, 496, 498, 499
- Simple wave, 46, 48, 116–120, 166, 173, 238, 240
- Single-layer potential, 51, 54, 56, 66, 88, 93, 100–102, 104, 115, 233, 321, 322, 331, 349, 356, 370, 385, 415
- Sloping beach, 214, 216, 219–222, 227, 488, 494, 497–502
- Sloshing problem, 105, 143, 176, 212, 229
- Sobolev's embedding theorem, 423
- Sobolev space, 88, 118, 165, 221, 423, 445, 469
- Solvability, 21, 50, 51, 55, 57, 58, 60, 65, 76, 87, 88, 91, 92, 95–97, 99, 103, 104, 110, 113, 116, 120, 121, 140, 142, 265, 318, 319, 322, 323, 326, 334, 336, 337, 341, 345, 358, 359, 362, 373, 375, 377, 380, 381, 387–390, 397–401, 404, 405, 411, 414, 424, 427, 431, 441, 485, 493, 495–498
- Sommerfeld's radiation condition, 28, 45, 52
- Source's track, 283, 285, 287, 288, 295, 316
- Spray resistance, 361, 394–396, 399, 402, 411, 416, 417
- Standing wave, 12, 13
- Steady-state problem, 10, 421
- Streamline, 247–253, 406, 407, 410, 411, 491
- Stream function, 130, 144, 145, 148, 150, 151, 157, 159–162, 178, 189–191, 247, 338, 347, 362, 368, 406, 412, 413, 416
- Subcritical stream, 345, 352, 359, 360, 497
- Submerged body, 50, 51, 59, 67, 68, 71, 78, 80, 81, 87, 97–100, 102, 125, 126, 140, 169, 212, 318, 349, 359–362, 378, 437, 442, 443, 460, 464, 474, 479, 484, 485, 487–490, 493, 496, 500
- Supercritical stream, 341, 359–361, 411, 413, 414, 416, 493
- Supplementary conditions, 16, 318, 361, 362, 364, 368, 378, 393–398, 400, 401, 403–406, 411, 412, 415–417
- Surface-piercing body, 60, 68, 81, 99, 100, 104, 109, 116, 117, 121, 125, 134–140, 143, 144, 146, 164, 165, 172, 177, 196–198, 202, 204, 212, 239–241, 318, 359, 361, 382, 405, 411, 416, 417, 433, 493, 497
- Theta functions, 484
- Time-harmonic waves, 265, 318, 421
- Toroidal body, 143, 164, 165, 205, 208, 209, 500
- Trapped mode, 142, 143, 146, 160, 162, 164, 176, 185, 189–191, 212, 214–216, 219, 220, 224–232, 234, 236–238, 240, 249, 252, 255, 256, 258–262, 405, 406, 486–490, 493, 495–497, 499, 501
- Two-dimensional problem, 1, 2, 16, 21, 37, 38, 68, 71, 76, 115, 121, 122, 140, 141, 172, 191, 214, 216, 238, 242, 246, 252, 305, 318, 349, 432, 433, 451, 461, 475, 492, 493, 497
- Two-scale asymptotic expansion, 435, 438, 439
- Uniqueness of solution, 50, 55, 84, 113, 136, 142, 241, 330, 341, 359
- Unsteady waves, 17, 421, 422, 433, 434

Subject Index

513

- Vector field, 67, 71, 75, 76, 78–82, 84, 85, 89, 136, 234, 235, 237
- Velocity potential, 3, 4, 7, 9, 10, 12, 15, 16, 21, 22, 37, 42, 44, 48, 66, 67, 93, 95, 109, 112, 116, 130, 138, 144, 145, 158, 160, 178, 216, 217, 222, 240, 246, 265, 267, 283, 312, 316, 330, 353, 362, 363, 395, 396, 410–412, 416, 417, 422, 435, 436, 438, 440, 442, 443, 447, 453, 459–461, 464, 474, 475, 480
- Vertical cylinders, 169, 188, 215, 216, 256, 257, 260–262
- Vortex, 407
- Water
 depth, 6, 15, 52, 57, 101, 157, 172, 198, 261
 domain, 11, 13, 42, 49–51, 54, 68, 70, 71, 81, 87, 88, 93, 95, 116, 117, 122, 127, 130, 134, 135, 138, 140, 159, 160, 165, 170–172, 178, 179, 185, 192, 200, 202, 204, 205, 207, 209, 215, 219, 221, 224, 232, 237, 249, 319, 341, 353, 362, 403, 407, 410, 411, 421, 450, 465, 475
- Water-wave problem, 4, 5, 14, 16, 21, 50–53, 55–61, 65, 68, 70–72, 74–76, 79, 81–88, 92, 93, 95–104, 107–109, 111–113, 115, 116, 118, 120, 121, 123–125, 127, 134–136, 138, 140–142, 146, 158, 166, 167, 171–173, 175–178, 185, 188, 193, 194, 199, 202–205, 208, 210, 212, 213, 231, 235, 239, 241, 311, 318, 361, 382, 385, 406, 417, 489, 493, 494, 496, 497, 500
- Water domain, 11, 13
- Watson's lemma, 42
- Wave
 height, 6
 resistance, 318, 349, 352, 359–361, 399, 416–418, 486, 487, 491–493, 497, 498, 502
- Wave-making resistance, 394, 396, 416, 486
- Wavelength, 6, 218
- Waveless potential, 398–400, 402, 415, 474
- Wave making resistance, 439
- Wiener–Hopf technique, 260
- Wronskian, 133, 160, 161