

# Index

## A

Analytic, 11–13, 15–17, 103–107, 110, 111, 116, 117, 121–123, 128, 129, 135, 136  
Asymptotically stable, 43, 44, 47, 54, 56, 77, 78, 81, 83, 84, 88, 89  
Autonomous, 2, 40, 91, 92, 137

## B

Barbashin-Krasovski-LaSalle criterion, 83

## C

Compact operator, 9, 10  
Composition of analytic maps, 13  
Convergence result, 91, 92, 96–98, 103, 106, 108, 112, 124, 125, 130, 131, 135

## D

Dissipative, 20, 21, 33  
Dynamical system, 37, 39–44, 67, 68, 70, 74, 84, 86, 96, 97

## E

Energy, 79, 81, 82, 87, 89, 110, 112, 128, 129, 133, 136  
Equilibrium point, 1, 41–45, 47, 48, 56, 57, 67, 77, 78, 83–85, 96, 133, 136, 137

## G

Global solution, 24, 41, 46, 47, 52, 53, 61, 72, 83, 91, 98, 102  
Gradient-like, 3, 67, 68, 86, 92, 95, 97–99, 105

Gradient system, 69, 86, 98, 101, 109, 110  
Gronwall Lemma, 5, 24, 26, 40, 46  
Growth condition, 26, 27, 52, 53, 72, 128, 130

## H

Heat equation, 25, 30, 51–53, 61, 71, 72, 128, 130, 134  
Hille-Yosida-Phillips theorem, 22

## I

Inverting analytic maps, 16

## L

LaSalle's invariance principle, 84, 85  
Liapunov, 2, 3, 42, 45, 47, 48, 50–52, 56, 77, 79, 88, 137  
Liapunov function, 2, 41, 42, 84, 85, 87  
Liapunov stability, 47, 50, 58, 60, 77  
Łojasiewicz, 103–106, 110, 111, 114, 115, 124, 125, 127, 130, 131, 133, 136  
Łojasiewicz gradient inequality, 2, 3, 8, 115–118, 123–125

## M

M-dissipative, 20–22, 24, 29, 33, 34, 39, 74

## N

Nemytskii operator, 15, 16, 129, 131, 136  
Non convergence result, 94, 101, 106, 137

## O

$\omega$ -limit set, 37, 40–42, 72, 78, 83, 96, 97, 99, 102, 103, 106, 126

**S**

- Self-adjoint, [21](#), [23](#), [32](#), [59](#), [63](#)
- Semi-Fredholm, [9](#), [117](#), [118](#), [120](#), [122](#), [128](#), [129](#)
- Semi-group, [1](#), [2](#), [22](#), [25](#), [29](#), [30](#), [35](#), [44–46](#), [52](#), [53](#), [61](#), [72–74](#), [85](#), [88](#), [89](#), [98](#), [123](#)
- Skew-adjoint, [21](#), [22](#), [24](#)
- Stable, [42–44](#), [61](#), [64](#), [84](#), [96](#)
- Strict Liapunov function, [41](#), [85](#), [87](#), [88](#)

**U**

- Unconditionally stable, [44](#), [96](#), [97](#)
- Unstable, [42](#), [44](#), [57](#), [59](#), [62–64](#)

**W**

- Wave equation, [26](#), [27](#), [32](#), [44](#), [53](#), [64](#), [72](#), [74](#), [75](#), [79](#), [130](#), [131](#), [136](#)