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| **Method** | **Advantage** | **Disadvantage** |
| Trial and Error | * Visual stability analysis via phase portraits | * Applicable only to simple systems up to second order |
| Small Singular Linearization /  Gain Scheduling | * Good closed-loop performance for a equilibrium point (SSL). * Good closed-loop performance over many equilibrium points (GS). | * Accurate only in a neighborhood around operating point(s) * Controller parameters fixed online * A lot of offline validation required |
| Feedback Linearization | * Globally stable with exponential tracking error * Linear in modeled domain * Bandwidth theoretically infinite for input signal tracking | * Lack of controllability at singularities * Requires exact knowledge and special class of system * More control effort is required * Not robust to uncertainties |
| Backstepping /  Robust / Adaptive | * Globally asymptotically stable * Model uncertainties well handled * Systematic procedures * Potential reduction in development time * Useful nonlinearities retained | * Analytic derivative calculation * Feedback control algorithm complex, especially for high order systems |

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| **Useful  Nonlinearities** | Less control effort and less precise model information required |
| **Flexible** | Less restrictive, more freedom in choosing stabilizing function (*x*) and Lyapunov function *V*(*x*) |
| **Recursive** | System is augmentable by a chain of integrators, creating intermediate states called virtual control laws ξ*k* that assist in control |
| **Constructive** | Systematic design procedure |