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| **Electrical Grid Stability Simulated Data Data Set**  *Download*: [Data Folder](http://archive.ics.uci.edu/ml/machine-learning-databases/00471/), [Data Set Description](http://archive.ics.uci.edu/ml/datasets/Electrical+Grid+Stability+Simulated+Data+)  **Abstract**: The local stability analysis of the 4-node star system (electricity producer is in the center) implementing Decentral Smart Grid Control concept. |  |

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| **Data Set Characteristics:** | Multivariate | **Number of Instances:** | 10000 | **Area:** | Physical |
| **Attribute Characteristics:** | Real | **Number of Attributes:** | 14 | **Date Donated** | 2018-11-16 |
| **Associated Tasks:** | Classification, Regression | **Missing Values?** | N/A | **Number of Web Hits:** | 4700 |

**Source:**

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**Data Set Information:**

The analysis is performed for different sets of input values using the methodology similar to that described in [SchÃ¤fer, Benjamin, et al. 'Taming instabilities in power grid networks by decentralized control.' The European Physical Journal Special Topics 225.3 (2016): 569-582.]. Several input values are kept the same: averaging time: 2 s; coupling strength: 8 s^-2; damping: 0.1 s^-1

**Attribute Information:**

11 predictive attributes, 1 non-predictive(p1), 2 goal fields:   
1. tau[x]: reaction time of participant (real from the range [0.5,10]s). Tau1 - the value for electricity producer.   
2. p[x]: nominal power consumed(negative)/produced(positive)(real). For consumers from the range [-0.5,-2]s^-2; p1 = abs(p2 + p3 + p4)   
3. g[x]: coefficient (gamma) proportional to price elasticity (real from the range [0.05,1]s^-1). g1 - the value for electricity producer.   
4. stab: the maximal real part of the characteristic equation root (if positive - the system is linearly unstable)(real)   
5. stabf: the stability label of the system (categorical: stable/unstable)