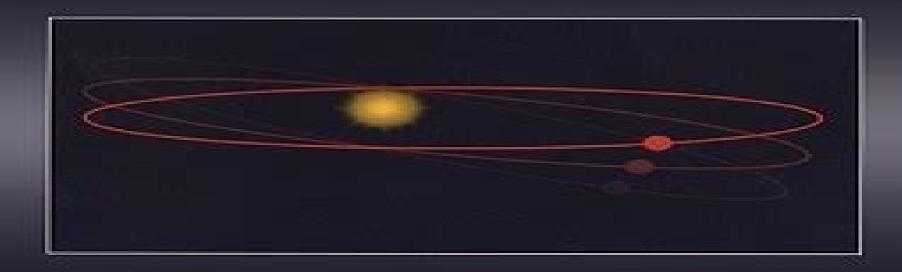
# Symmetry in Mechanics

A Gentle, Modern Introduction



Stephanie Frank Singer

# **Symmetry In Mechanics A Gentle Modern Introduction**

**Chjan Lim, Joseph Nebus** 

#### **Symmetry In Mechanics A Gentle Modern Introduction:**

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Spezialfall bewiesen und die dringend ben tigte allgemeinere Version schlicht berichtet Hier und da werden exemplarisch auch mathematische Beweise in aller Strenge und Ausf hrlichkeit dargeboten um die Studierenden mit der mathematischen Denk und Ausdrucksweise zu konfrontieren und ihre Kritikf higkeit bez glich mathematischer Vertrauensw rdigkeit einer Argumentation zu schulen Dies scheint mir in der Tat zumindest fr die begabteren Studierenden ein wichtiger Aspekt zu sein angesichts einer schier un bersehbaren Flut von Fachliteratur bei der junge Wissenschaftler es oft als eine Herausforderung empfinden zwischen vertrauensw rdigen und weniger vertrauensw rdigen Beitr gen zu unterscheiden Am anderen Ende des Spektrums finden sich ab und zu auch knappe Ergebnisberichte ber tiefliegende Resultate die den Rahmen der Vorlesung sprengen w rden Die Aufgabensammlung enth lt etwa zu 70 80 % Aufgaben bei denen das Schwergewicht auf dem Ein ben von Rechentechniken liegt Theoretische Aufgaben die helfen Begriffe zu kl ren Beweisschritte nachzutragen logisches Argumentieren zu ben oder Ausblicke auf zus tzlichen Stoff zu geben sind durchaus vertreten aber nur zu 20 30 % Zu dem Skript geh rt ein sorgf ltig gestaltetes Glossar Kurzfassung das alle formalen Definitionen und S tze enth lt und als Nachschlagewerk zur Klausur und Pr fungsvorbereitung an die Studierenden verkauft wurde Die Beweise und Beweisskizzen des Skripts enthalten h ufig Argumentationen die eigentlich mathematisch nicht haltbar sind In vielen F llen ist es m glich sie durch korrekteBeweisschritte zu ersetzen ohne den Text aufzubl hen und dies micht ein selbstverst ndlich tun Woldies nicht m glich ist m chte ich deutlich erkl ren da hier eine Beweisl cke in Kauf genommen wird Im Sinne der begrifflichen Klarheit und der Schulung der mathematischen Kritikf higkeit erscheint es mir n mlich dringend geboten dem Leser stets reinen Wein dar ber einzuschenken ob er es hier mit einem strengen Beweis einer Beweisskizze oder einer blo en Plausibilit tserkl rung zu tun hat Was als Beweis bezeichnet wird kann ein knapp skizzierter Beweis sein aber es darf kein fehlerhafter Beweis sein An manchen Stellen lassen sich Beweise noch verk rzen oder vereinfachen manchmal unter Heranziehung neuerer Methoden im elementaren Kontext Ich m chte der Sprachbarriere zwischen Mathematik und Physik entgegenwirken indem ich berall dort wo fr ein und dieselbe Sache unterschiedliche Konventionen oder Terminologien benutzt werden explizit auf diesen Umstand hinweise und die beiden Terminologien leichberechtigt nebeneinander stelle **American Journal of Physics** Encyclopedia of Philosophy Donald M. Borchert, 2006 Presents a collection of alphabetically arranged entries that ,2002 provide information on a wide range of topics related to philosophy including ethics religion history aesthetics logic metaphysics from Aristotle and the Greek Academy to modern concepts of feminist theory and philosophy of the mind

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