

## 5 Armature Reaction Nptel

Commutation in DC Machine or Commutation in DC Generator ...

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II. Synchronous Generators

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5 Armature Reaction Nptel 37.5 Armature reaction In a unloaded d.c machine armature current is vanishingly small and the flux per pole is decided by the field current alone. The uniform distribution of the lines of force get upset when armature too carries current due to loading. In one half of the pole, flux lines are concentrated and in the other half they are rarefied. L-37 TB ET EE NPTEL Electrical Machines-I by Prof. Debaprasad Kastha, Department of Electrical Engineering, IIT Kharagpur. For more details on NPTEL visit <http://nptel.iitm.ac.in>. Mod-01 Lec-24 Lecture-24-Armature Reaction Armature winding, commutator segments and brushes. Week 8: Lap and wave windings and number of parallel paths in armature circuit. Emf equation. Week 9: Torque equation. Separately excited and shunt generator characteristics. Week 10: Armature reaction and its ill effects. How to nullify the effects of armature reaction. ELECTRICAL MACHINES - I - nptel.ac.in 5 Armature reaction  $\Psi(I_a) = \psi(I_a) + R_a I_a$  Total armature reaction Compensating winding disadvantages: • for a single value of  $I_a$  • shift direction depends on rotation direction • shift direction depends on functioning mode (generator or motor) Shift of the brushes w.r.t. pole axis Reduction of the armature reaction DC machines DC machines - Montefiore Institute The armature reaction of alternator or synchronous generator, depends upon the phase angle between, stator armature current and induced voltage across the armature winding of alternator. The phase difference between these two quantities, i.e. Armature current and voltage may vary from  $-90^\circ$  to  $+90^\circ$  If this angle is  $\theta$ , then, Armature Reaction in Alternator or Synchronous Generator ... NPTEL - Mechanical - Mechatronics and Manufacturing Automation Module 5: Hydraulic Systems Lecture 1 Introduction 1. 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DC Machines « Sohail Ansari Name of the Department- Electrical Engineering SUBJECT CODE-1302 NAME OF THE SUBJECT- ELECTRICAL MACHINE1 (PART 2) SEMESTER- 3RD BRANCH- EE&EEE ... shunt, series and compound motors, Armature reaction and commutation, Starting of DC motor, Principle of operation of 3 point and 4 point starters, drum controller, Constant & Variable losses, ... Name of the Department- Electrical Engineering Figure 4: The phasor diagram showing the effect of armature reaction when the power factor is lagging. Synchronous Generators Dr. Suad Ibrahim Shahl 14 By following the above sequence of events, we can obtain the phasor diagrams for the lagging (Figure 4) and the leading (Figure 5) power factors. ... II. Synchronous Generators DC Machines nptel Notes | EduRev notes for is made by best teachers who have written some of the best books of . ... Terminal voltage will start falling, when saturation sets in and armature reaction effect becomes pronounced at large load current. 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and compound motor characteristic. Week 12: Starting, speed control and braking of DC motor. Testing. ... photograph and the score in the final exam with the breakup. It will have the logos of NPTEL and IIT Kharagpur. It will be e-verifiable at [nptel.ac.in/noc](http://nptel.ac.in/noc). Electrical Machines - I (IITKGP) - CourseView Notes - L-37(TB)(ET) ((EE)NPTEL) from ELECTRICAL EE212 at International Institute of Information Technology. Module 9 DC Machines Version 2 EE IIT, Kharagpur Lesson 37 EMF & Torque View Notes - L-37(TB)(ET) ((EE)NPTEL) from ELECTRICAL EE212 at International Institute of Information Technology. Module 9 DC Machines Version 2 EE IIT, Kharagpur Lesson 37 EMF & Torque *Commutation in DC Machine or Commutation in DC Generator ...*

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*Armature Reaction: The effect of magnetic field set up by ...*

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DC Machine are the electromechanical energy conversion devices which converts either DC power to mechanical power or mechanical power to DC power. These Notes has been made by me after watching NPTEL lectures given by Dr. Debaprasad Kastha from IIT Kharagpur.

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