Masaya Iwasaki (28J1009).

I learned the relation between block diagram and Laplace transform.

And I also learned system and controller.

It is important what sensor is needed and the strategy of controller.

Controller is deviide two types. one is active controller.

The other is passive controller.

Examples

Active controller are air conditioner and car suspention with air suspention.

Passiv controller is Blade number x revolution. and car suspention

" Controller design in Frequency domain "

no. it is exciting frequency in case of ship vibration due to the propeller.

入学年度	学科／専攻	学科目／課程	年次	学籍番号	2 8 T 1 0 0 2 8
				フリガナ	
				氏名	Takumi Kubo
科目			担当教員		

First topic of today lecture was "Laplace Transform" and "Block diagram". These has same feature, that is "we can obtain relation between input and output". If I forgot one, but didn't forget another, I can get relation. This is my most impressive thing today. After that we learned about how to controll (temperature car and ship vibration ---). Important things are ① Structure of G(s) ② Design H(s) ③ What is the sesor from them we can design good controller.

V.G.
Simple but

Masaya Tsuzaki (2871009).

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In today's lecture, professor suggested that any system can by described by block diagram. For example, professor illustrated mass-spring system of text book and explained that system by using Laplace Transform when there is an external force existed. Then, professor also suggested that input relationship between input and output of the system can be explained by differtial equations. The output of that system which effected by controller is also a feedback to the system itself. Because of the very basic Newton's Law, most of systems are rule by a ~~2nd~~ second order equation. At last, professor discussed the importance of designing a controller that including its sensor and its strategy. A good controller at least should provide the system with steadiness and promptness.

V.G.

In today's class we spoke about block diagrams, first of all we derive the G(s) function which is the one that gives the relation between the output and the input of the system.

Then we spoke about controllers, which are used in case we want to control the system independetly of the input of the system. Because of this, we established the two main points we need to fulfill in order to design an efficient system. First we need to identify the structure that best fits to our system, usually second order structures because of Newton's second law, and then design the controller of our system.

In order to understand it better, some examples were given such as temperature control system which is an active controller system, and also we saw suspension and propeller systems which are passive controller systems.

Finally, and no less important it was said that usually controllers are designed using the frequency domain, and that in passive control systems the common factor is to design structures, trying to avoid natural frequency in order to avoid resonance.

・By using Laplace tranceform, Block diagram can be simplified and simplified diagram is fundamental of the "system", We can design anything by combining system with controller or some "subsystem"s (I think) — ok.
The processes are
1) Make or Identify the system (or Laplace Operetor "s")
2) Design around the system (controller, and so on.)
For example, Air conditioner has the intelligent controller and sensor etc...

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MA CHONG 28J10111 Nov. 22th.

Today, I learned the relation between Block Diagram and Laplase Transform. Through a spring system, I learned how to apply the Laplase Transform into Block Diagram in order to ~~Simplify~~ Simplify the system.

Besides, I learned the basic theory about Block Diagram, G(s) and H(s). G(s) is the identify system and H(s) is the designing. Through the spring system, I know the most common order of S for G(s) is ~~2~~ two because the Newton Law. Therefore, we can get the G(s) by assuming G(s)'s equation.

For designing of controller, I learned the basic ideas through the air-controller system. I knew the sensor for controller is dependan on the function of all system. Meantime, there are many strategies for controller. For this class, we just consider the Steadiness and promptness, in other words, the controller structure.

At last, we used a example about a car to learn the RAO function. For a car, in order to get a stable moving, we should design a frequency dependent controller. In most case, the controller design system is in freyuency domain. So we usually use Laplase Transform in Controller Design. Therefore, the Laplase Transform is very important for Block Diagram.

工学部・工学研究科

Nov. 22th Xu Guangyin 28J10101

Summary of Lecture

We started today's lecture by reviewing some Laplace transform equations in order to explain a block diagram. Any differentiate equation can be expressed in form of a block diagram by using Laplace transform and Prof. Hasegawa showed us how to work this out by using a spring system sample.
Then we studied what is feedback control. Actually the objection of this lecture is to describe how to design a controller H(s) of feedback control. with a air conditioner controller sample. This sample also made me remind how a autopiolot control system control the rudder in a chip. Besides this. we also learnt some concepts of sensor and strategy of controller. and some examples of active controller and passive controller. I am very insterested in this controll theory and today's lecture was very impressive.

V. Good

Yaseen Adnan Ahmed
28J10108

Today, we have learnt how to express any system in block diagram using Laplace Transformation. We consider here, a simple spring mass system. We have also learnt that, s is Laplace transform is a complex number, $s = \beta + i\omega$; and if $\beta = 0$, then Fourier transform is a kind of Laplace transform, where ω be the frequency.

Then, we have learnt about feedback control, ie to the output must be controlled by the controller and feedback to the input. Here, two important things are -

1) Identify the system G(s) and
2) Design the control H(s)

& G(s), in most cases has the order of two. And, H(s) should be suitable for G(s).

In case of AC, the controller must work based on some analog. So the strategy of controller is are the steadiness and promtness. & They are active controller. Again, in case of car running on road, the damping is the passive controller. Similar for ship structure design, when the aim is to minimize the vibration induced by propeller. And, the controller design system is always in frequency domain in such cases.

Thus, if can define the structure by G(s), and H(s) to control it, we can express any system using Laplace transform. And, also the feedback control is very important. These two are the main concept of today's lecture.

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V. G.

28J10097 Eishi Yoshida

Summarize of the lecture of Nov. 22

We studied about system and controller. Firstly, we must identify system function. To know the system function, we have two ways as block diagram and Laplace transform. If we obtain the system function by using these ways, next we consider the controller. It is important to design the controller. We must design it trying to escape resonance frequency of input. If we can design the suitable controller, our life will be good.

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Risa Kitamoto (28J10025)

If motion equation can be obtained, we can draw block diagram. When considering the motion of the object, system corresponding to it exists. The system is represented using the function of "s". "s" means the complex number.

Generally, control system is needed if a certain system exists. The control systems is called as "Feedback Control".

To determine the control system, it is important to ① identify the system and ② design the control system suitable for the system.

To design the control system, it is necessary to consider the strategy of control system. For example, the strategy is "steadiness", "promptness", and so on. And it is also neccessary to consider "what is the sensor."

one of

Good.

28J10083 ✓ Shuji Matsuoka.

To improve our life it is very importan to design various control system. Controllen modifies output date? and do feedback. Thus, controller plays many important roll. For example it maintains system's stability and moves quickly.

much ?

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28J10004 ✓Yuto Ito

Today we learned about Block diagram.
It is important to identify "G(s)" and design "H(s)".
Prof. Hasegawa showed us some example; mass-spring system, control of long stick, temperature control and so on.
I thought the word "Feed back control" is one of the important word we learned today.
In the mass-spring system, we use Laplace Transform. The transform was difficult for me. So I will study it.

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MAO BANGCHENG 28J10105

Because we learnt Laplace transform last week, so, today, professor tought us some application about control. In general we learn the knowledge not to take part in test, but for the engineering.

He made it easily to be understood using a teaching tool, so I knew how to make a simple control system. Then we made a design of temperature control together. Because it just like a air conditioner we used everyday, it was vividly.

The most importance, we knew the feedback, the control system's function: promptness. stability.

The lecture made me feel interesting. So I think I can learn it well and do something in the future.

Good

Minister of Law

I was absent in the time before last lecture. I really aporogize for that. and today I make the comment for the first time.

Today. Professor activated us by a scandal of prime minister at the beginning of this lecture. Then Professor summirized the laplace trasformation and told us how to use the theory to define any system by diagram or formula (especially for the second order)

To be honest I have learned control system by myself before. However I never knew the idea or the policy when designing control system I just whether drew diagram or calculated before. In this lecture. I finally got to know the idea and policy of designing control system. That's I really wanted to learn and I'm sure it will be quite helpful to me in the near future when I do my own research rather than attend exam.

Moreover. I am also not quite sure the function of Gs and Hs. I even thought Gs and Hs can be eliminated and somewhat worthless to focus. But by this lecture I got to know by using those the system can be abbreviated by using that easily and also easy to be understood.

I appreciated what I have learned in this lecture and I'm sure I'will review it properly after I go back home

V.G.

✓

Yu Lufan

2811013

工学部・工学研究科

✓

Emel TOKGOZ
28J10109

22/11/2010

In this lecture, the relation between laplace transformation and the block diagram is mentioned. To define a system, laplace transform is used to relate input and the output of the system. The block diagram for mass-spring system with an external force is simplified by using Laplace transformation. Also, it is mentioned that fourier transformation is similar to laplace transformation. Moreover, block diagrams are useful to control the systems. In this lecture, some examples are given how to control the system. Feedback control is illustrated. To control the system G(s) should be identified and the structure of G(s) should be known. (order of s) Secondly, H(s) should be designed. Finally, some important aspects related to design an effective controller are talked. According to me, this course is interesting in terms of looking into different systems and more importantly mentioning about how to "control" them.

V.G