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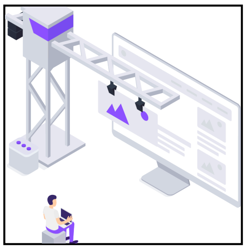
Indian Institute of Technology Patna

Advertisement No. 1



Post Applied

DEPARTMENT	POSITION	SPECIALIZATION
Mathematics	**Professor**	**Math**

Applicant's Details

Candidate's Name: **HEY MAN**

Father's / Husband's Name: Father Name

Mother's Name: mother

Date of Birth: 2

Gender: Male

Category: General

Marital Status: Married

Citizen of India: By birth

PWD: Yes

Permanent Address: F4, Rajparis Padmam Apartments, 188B Sundarraj Nagar, Thathaneri Main Road, Thathaneri

Address for Correspondence: F4, Rajparis Padmam Apartments, 188B Sundarraj Nagar, Thathaneri Main Road, Thathaneri

PIN Code: 688688

Mobile No: 09943561865

Email: dhushyanth5602@gmail.com

Academic Qualifications

SCHOOL/INSTITUTE	DATE OF ENTRY	DATE OF LEAVING	BOARD/UNIV.	EXAM/DEGREE	DIVISION	SUBJECTS	PERCENTAGE/CPI	YEAR OF PASSING
sdfsdf	Jun 4, 2024	Jun 6, 2024	sdfsdfs	10th	fsdfsdfsd	fsdfsdf	66	2001
sdfsdfsd	Jun 4, 2024	Jun 6, 2024	sdfsdfsdf	12th	sdfsdf	sdfsdfsd	65	2003
sdfsdfsdfs	Jun 4, 2024	Jun 6, 2024	sdfsdfsdfsdfsdf	Masters	dfsdfsdfs	dfsdfsfdfsd	65	2023
sdfsdfsdf	Jun 4, 2024	Jun 6, 2024	sdfsdfsdfsdfs	Bachelors	dfsdfsdfsd	fsdfsdfsdfsdf	66	2002

Work Experience

ORGANISATION/INSTITUTE	POSITION	NATURE OF DUTIES	DATE OF JOINING	DATE OF LEAVING	SCALE OF PAY	REMARKS
dcsdcsdcsdc	sdcsdcsd	csdcsdcsdcs	Jun 7, 2024	Jun 5, 2024	szdcsdcsdc	csdcsdcsdc

References

NAME	DESIGNATION	ADDRESS	EMAIL
Dhushyanth Sundararajan	sdfsdf	F4, Rajparis Padmam Apartments, 188B Sundarraj Nagar, Thathaneri Main Road, Thathaneri	dhushyanth5602@gmail.com
Dhushyanth Sundararajan	sdfsdf	F4, Rajparis Padmam Apartments, 188B Sundarraj Nagar, Thathaneri Main Road, Thathaneri	dhushyanth5602@gmail.com
Dhushyanth Sundararajan	sdfsf	F4, Rajparis Padmam Apartments, 188B Sundarraj Nagar, Thathaneri Main Road, Thathaneri	dhushyanth5602@gmail.com

PhD Thesis Details

Title of your Ph. D. Thesis	xdffsdfs
Name of your Ph.D. Supervisor	fsdfsdfsdf
Name of your Co-Supervisor	
Date of thesis submission	
Date of viva-voce	

Thesis Guided

COMPLETED	ONGOING
3	3

Patent Details

NUMBER OF PATENTS
3

Citation Details

4

Research Publications

YEAR, VOL. NO. PAGE	AUTHORS	TITLE OF THE RESEARCH PAPER	JOURNAL/CONFERENCE	H- INDEX AND/OR CORE RANK	IMPACT FACTOR
dfsdfsdf	sdfsdfs	sdfsdf	sdfsdfs	sdfsdfs	sdfsdf

Specialization: sdfsdfs

Did you previously apply for any post in this Institute? / Advertisement Number : dfgdfgdfgdfg

If the appointment is offered, how much time would you need before joining the post? : 1kjhnkjhkjh

If you are employed, please state your present basic pay and scale of pay: Tamil Nadu

Teaching Experience

NO. OF DIFFERENT COURSES TAUGHT	NO. OF YEARS
2	2

Book Published

5

Recognition

CATEGORY	DETAILS
Fellow of professional body	sdfsdfazsd
Member of professional body	fasdfasdf
Editorial board memberships	sdfasdf
Seminars/conferences organized	asdfasdfasdf

Legal History

Do you have any legal proceeding ongoing	
Have you at any time been charged acquitted or convicted by a court of law in India or outside India	

List of Uploads

Proof of Date of Birth | Photograph | Research & Development / Industrial/Training experience | Patent Lists | Journal Publications

Conference Publications | Lab Experiences | Description of PhD Works | Research Plan/ Teaching Plan/Vision and Mission for IIT Patna

fghfghfgh

Awards and Honors

Hi

nice one

bye

thanks

Applicant's Signature:	Applicant Signature

[illegible]

Indian Institute of Technology Patna

Advertisement No. 1

Declaration

I hereby declare that I have carefully read and understood the instructions attached to the advertisement as available on Patna website and that all the entries in this form are true to the best of my knowledge and belief. I also declare that I have not concealed any material information which may debar my candidature for the post applied for. In the event of suppression or distortion of any fact like category or educational qualification etc. made in my application form, I understand that I will be denied any employment in the Institute and if already employed on any of the post in the Institute, my services will be summarily terminated forthwith without notice or compensation.

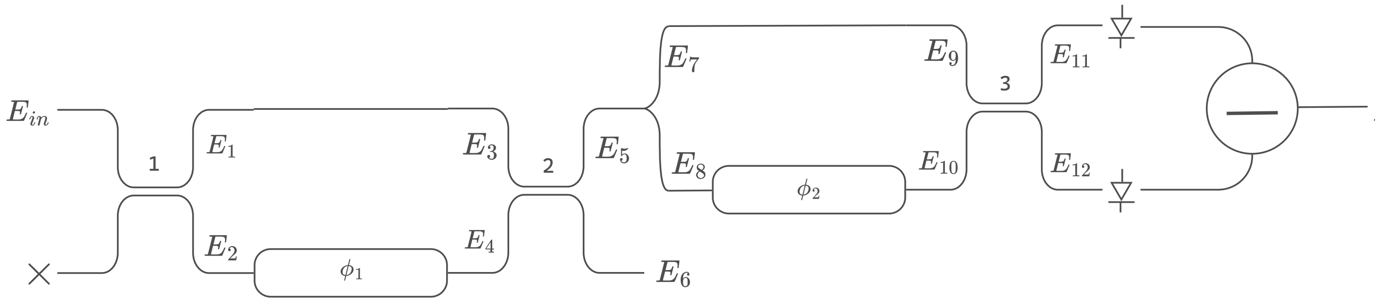
Applicant Signature

(Signature of the Applicant with Date)

Place: | Signature:
Dated: | (Head of the Institution/Organization)
Telephone: | Designation:
Fax: | Address:
Email:

Remarks:

Diagram



Modulating For Input

For initial directional coupler, input fields are E_{in} and 0.

The transfer matrix of directional coupler is giver as follows

$$TM = \begin{bmatrix} \sqrt{1-\alpha} & j\sqrt{\alpha} \\ j\sqrt{\alpha} & \sqrt{1-\alpha} \end{bmatrix} \tag{1}$$

Directional Coupler (1)

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&= \frac{E_{in}}{2} \begin{bmatrix} 1 & j \\ 1 & j \end{bmatrix} \begin{bmatrix} 1 \\ je^{j\phi_1} \end{bmatrix} \\
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Therefore, we get

$$E_5 = \frac{E_{in}}{2}(1 - e^{j\phi_1}) \tag{8}$$

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We can ignore E_6 since it is not being used as input.

Therefore, the electric field which represents the inputs of MAC operation can be represented as

$$E_{input} = \frac{E_{in}}{2}(1 - e^{j\phi_1}) \tag{10}$$

MultiMode Interferometer (MMI)

The field is split into two fields having equal power.

Thus,

$$E_7 = E_8 = \frac{E_5}{\sqrt{2}} = \frac{E_{in}}{2\sqrt{2}}(1 - e^{j\phi_1}) \tag{11}$$

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Second Modulator

After the modulator ϕ_2, we get,

$$E_9 = \frac{E}{\sqrt{2}} \tag{12}$$

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Applying the transfer function,

$$\begin{aligned}
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&= \frac{E_{in}}{2\sqrt{2}} \begin{bmatrix} \sqrt{1-\alpha} & j\sqrt{\alpha} \\ j\sqrt{\alpha} & \sqrt{1-\alpha} \end{bmatrix} \begin{bmatrix} 1 \\ e^{j\phi_2} \end{bmatrix} \qquad (14)
\end{aligned}$$

Applying $\alpha = \frac{1}{2}$ in eqn (14),

$$\begin{bmatrix} E_{11} \\ E_{12} \end{bmatrix} = \frac{E_{in}}{4} \begin{bmatrix} 1 & j \\ j & 1 \end{bmatrix} \begin{bmatrix} 1 \\ e^{j\phi_2} \end{bmatrix}$$

Expanding,

$$\begin{aligned} E_{11} &= E(1 + je^{j\phi_2}) \\ E_{12} &= E(j + e^{j\phi_2}) \end{aligned}$$

Intensity Reading

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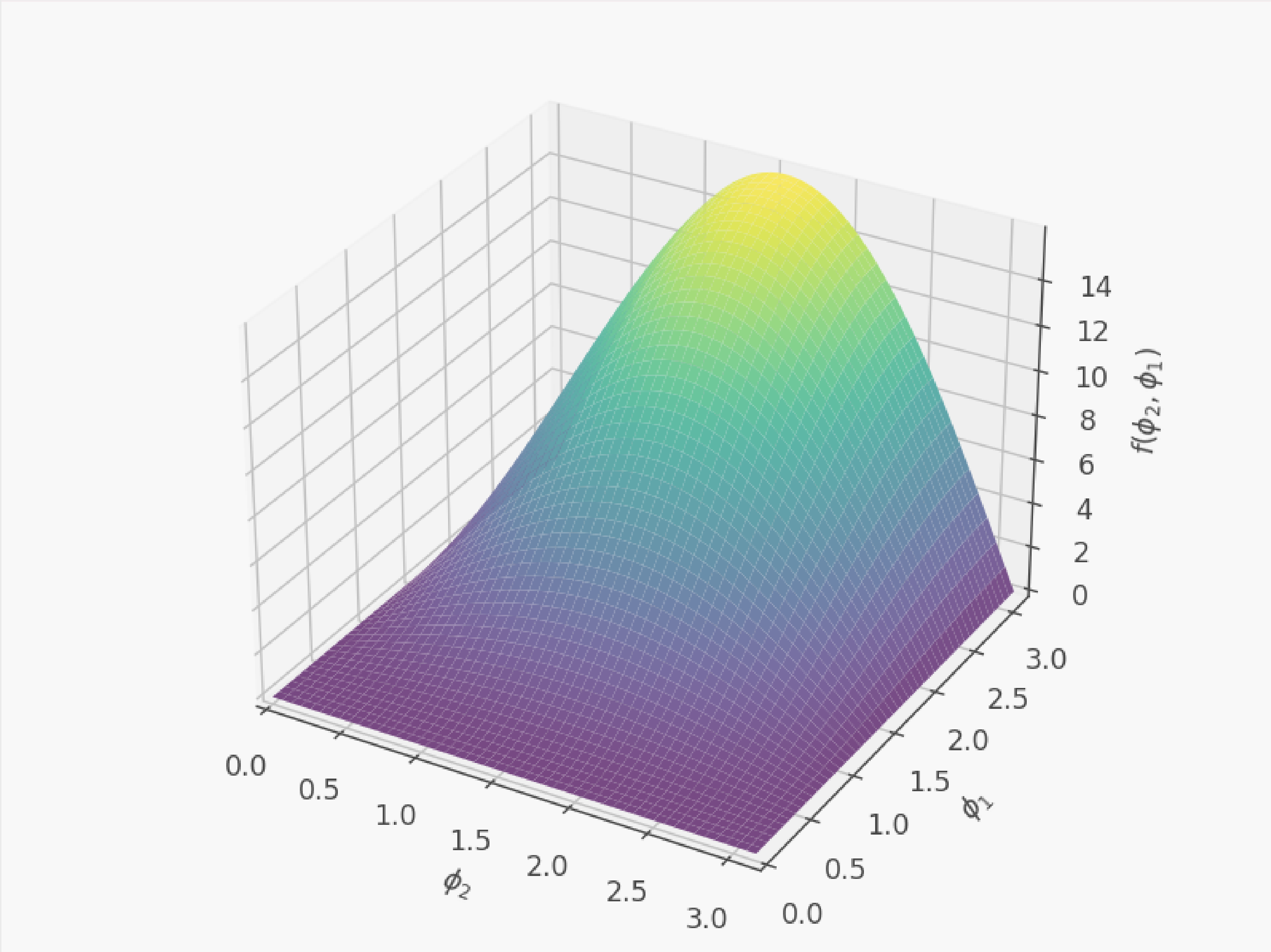
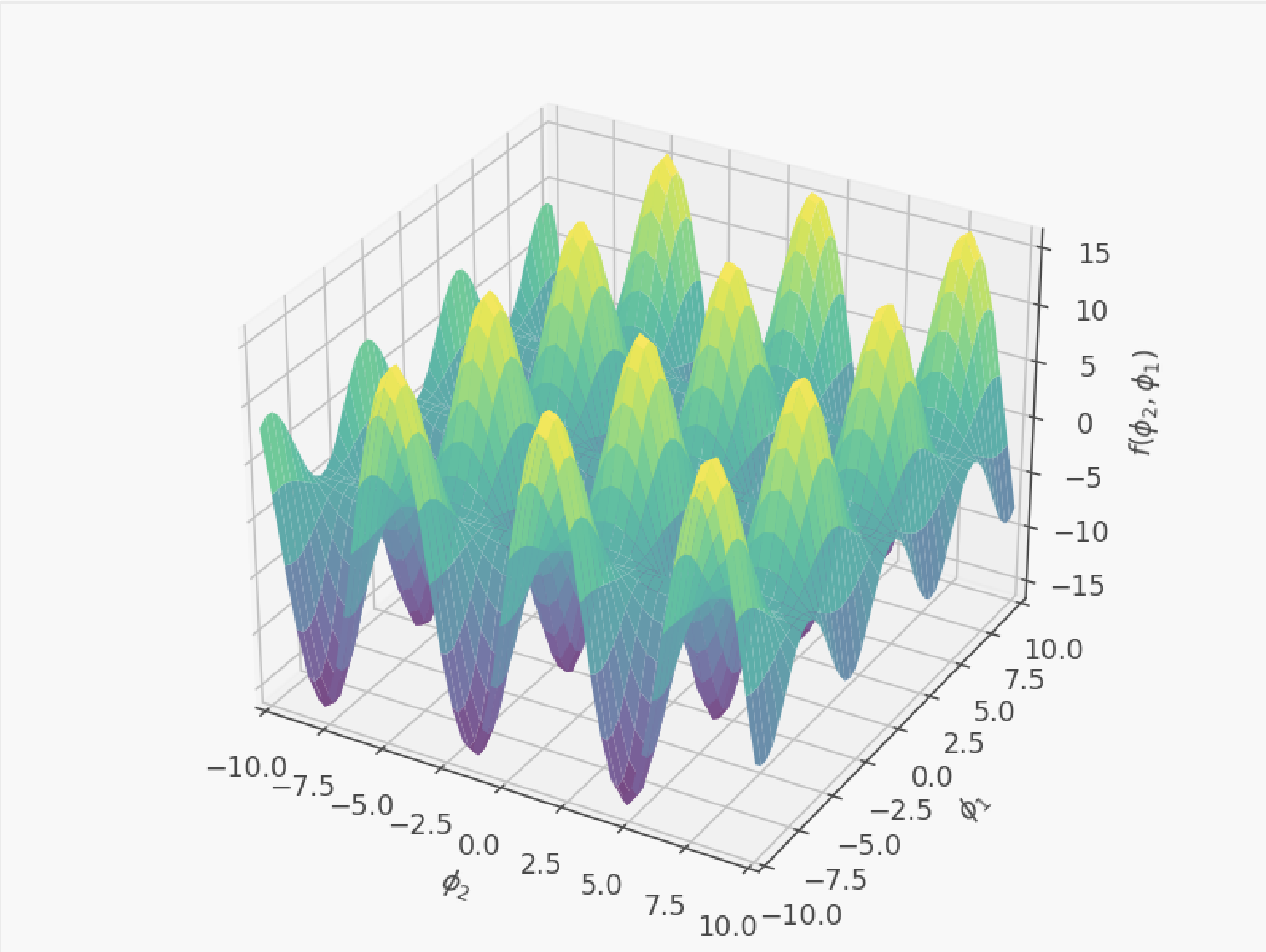
Plots

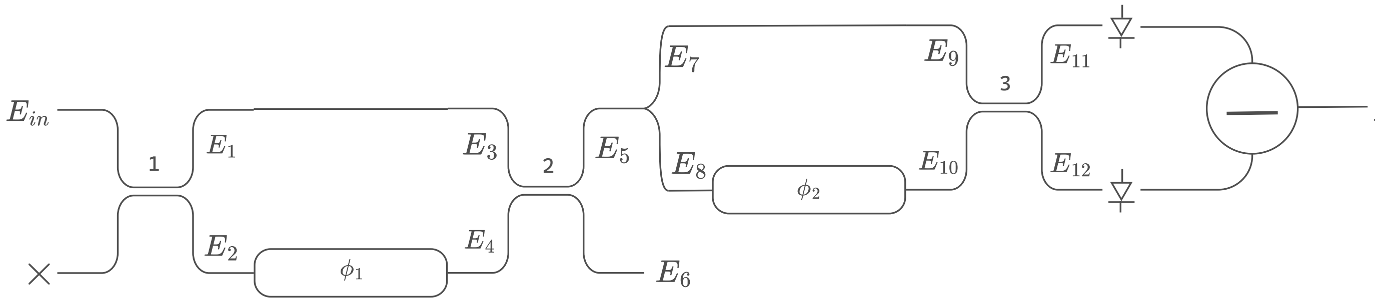


Intensity vs Phases Plot



Intensity vs Phases over a broad range of angles to show periodicity

Diagram



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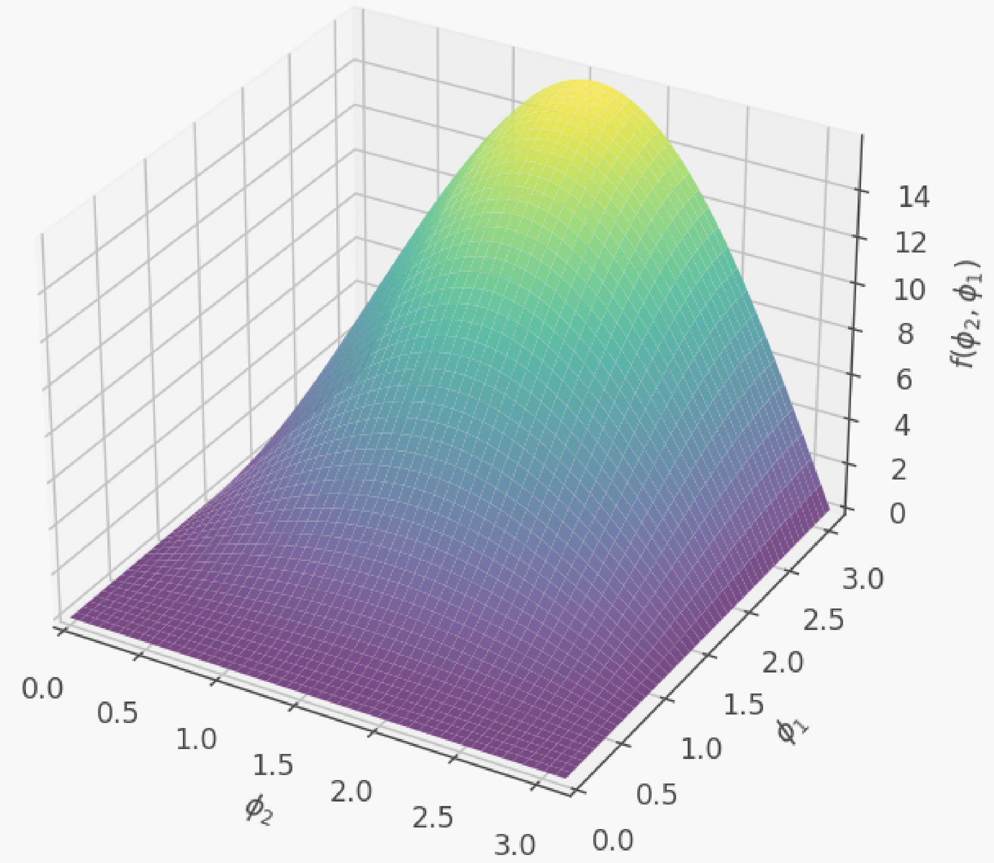

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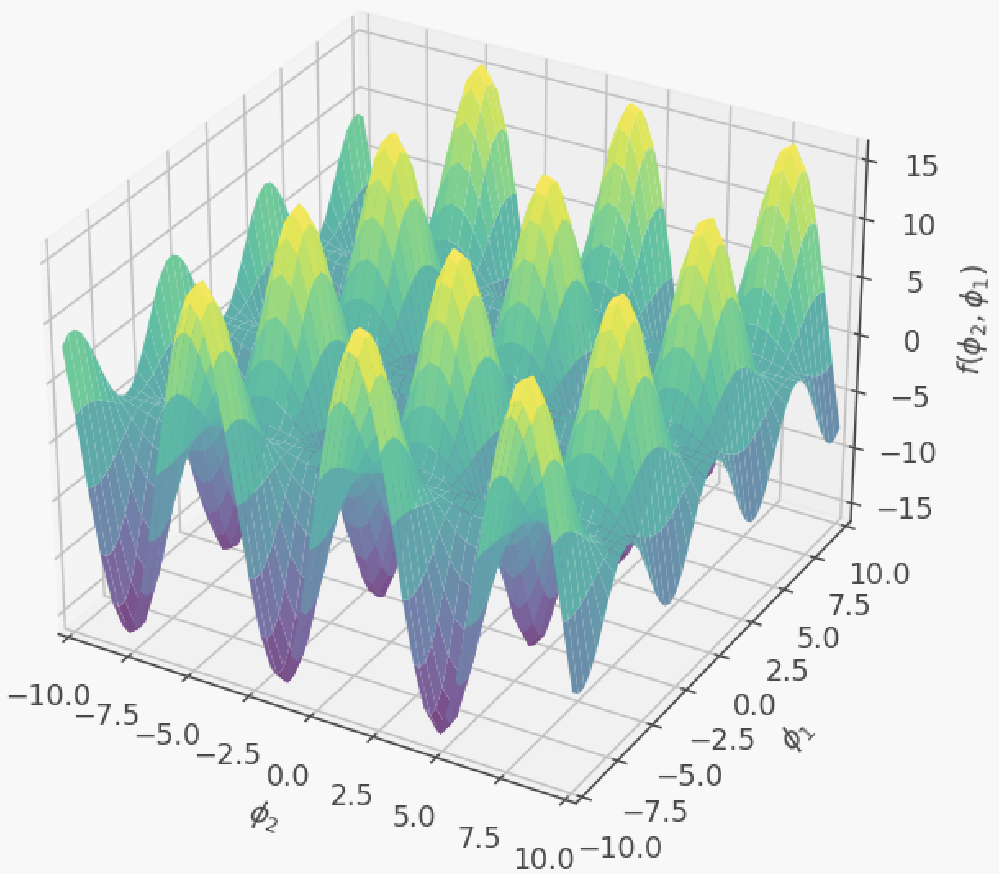
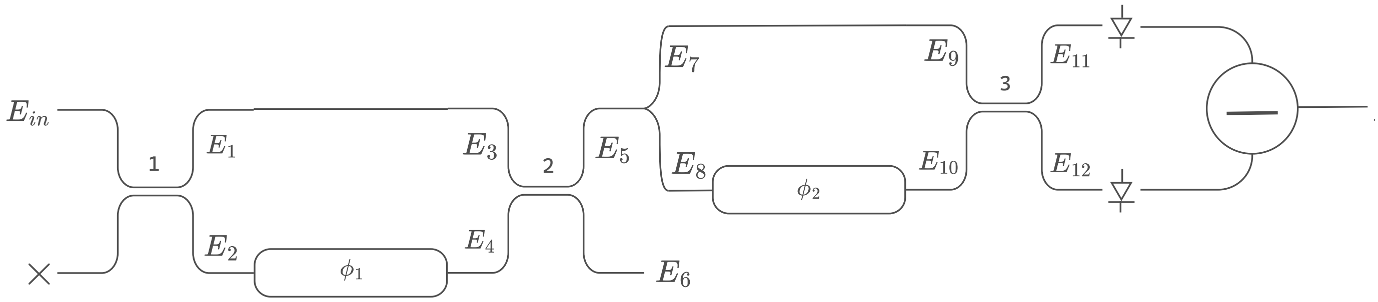


Intensity vs Phases over a broad range of angles to show periodicity

Diagram



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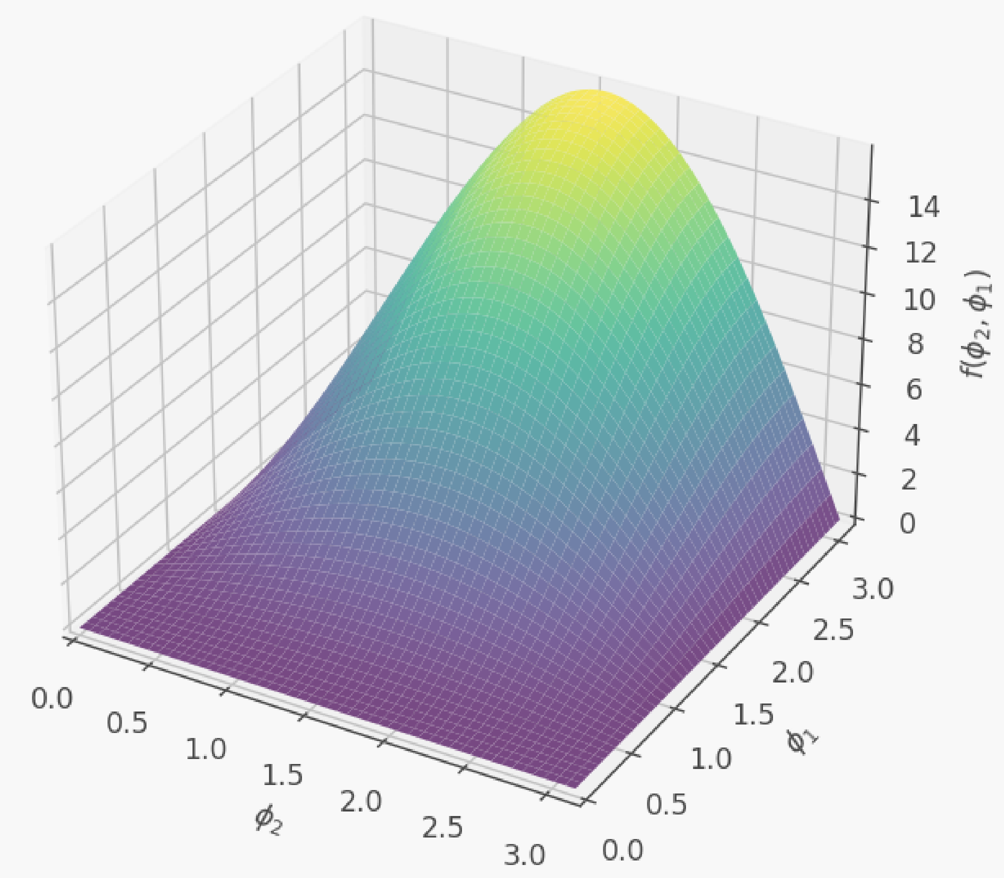
Plots



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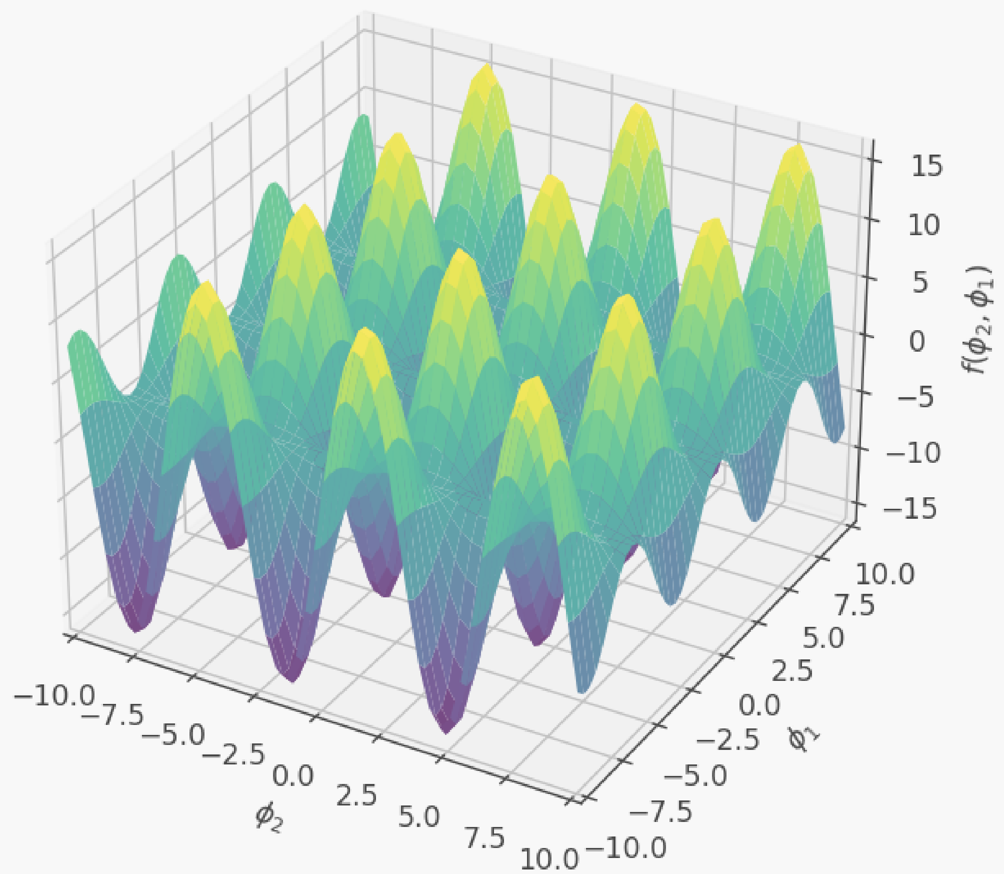

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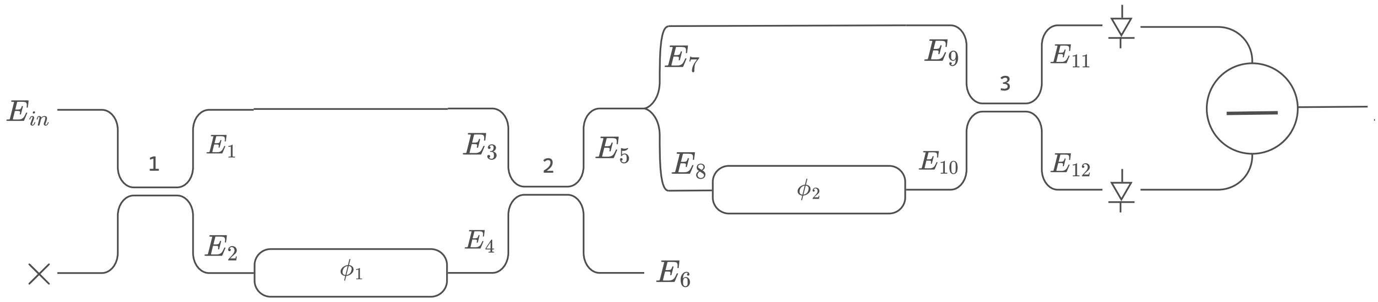

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$$= \frac{E_{in}}{2} \begin{bmatrix} 1 & j \\ 1 & j \end{bmatrix} \begin{bmatrix} 1 \\ je^{j\phi_1} \end{bmatrix}$$

$$= \frac{E_{in}}{2} \begin{bmatrix} 1 - e^{j\phi_1} \\ j(1 + e^{j\phi_1}) \end{bmatrix}$$

Therefore, we get

$$E_5 = \frac{E_{in}}{2}(1 - e^{j\phi_1}) \tag{8}$$

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Therefore, the electric field which represents the inputs of MAC operation can be represented as

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The field is split into two fields having equal power.

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Applying the transfer function,

$$\begin{aligned} \begin{bmatrix} E_{11} \\ E_{12} \end{bmatrix} &= \begin{bmatrix} \sqrt{1-\alpha} & j\sqrt{\alpha} \\ j\sqrt{\alpha} & \sqrt{1-\alpha} \end{bmatrix} \begin{bmatrix} E_9 \\ E_{10} \end{bmatrix} \\ &= \begin{bmatrix} \sqrt{1-\alpha} & j\sqrt{\alpha} \\ j\sqrt{\alpha} & \sqrt{1-\alpha} \end{bmatrix} \begin{bmatrix} 1 \\ e^{j\phi_2} \end{bmatrix} \\ &= \frac{E_{in}}{2\sqrt{2}} \begin{bmatrix} \sqrt{1-\alpha} & j\sqrt{\alpha} \\ j\sqrt{\alpha} & \sqrt{1-\alpha} \end{bmatrix} \begin{bmatrix} 1 \\ e^{j\phi_2} \end{bmatrix} \end{aligned} \tag{14}$$

Applying $\alpha = \frac{1}{2}$ in eqn (14),

$$\begin{bmatrix} E_{11} \\ E_{12} \end{bmatrix} = \frac{E_{in}}{4} \begin{bmatrix} 1 & j \\ j & 1 \end{bmatrix} \begin{bmatrix} 1 \\ e^{j\phi_2} \end{bmatrix}$$

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$$\begin{aligned} E_{11} &= E(1 + je^{j\phi_2}) \\ E_{12} &= E(j + e^{j\phi_2}) \end{aligned}$$

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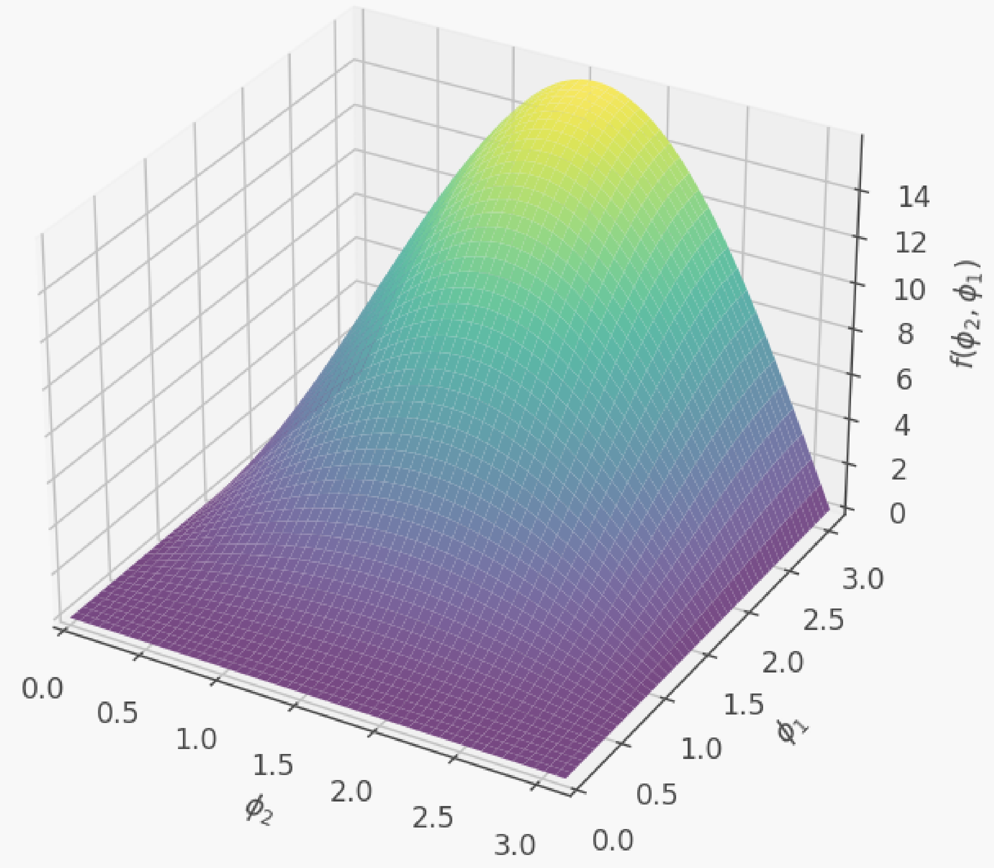
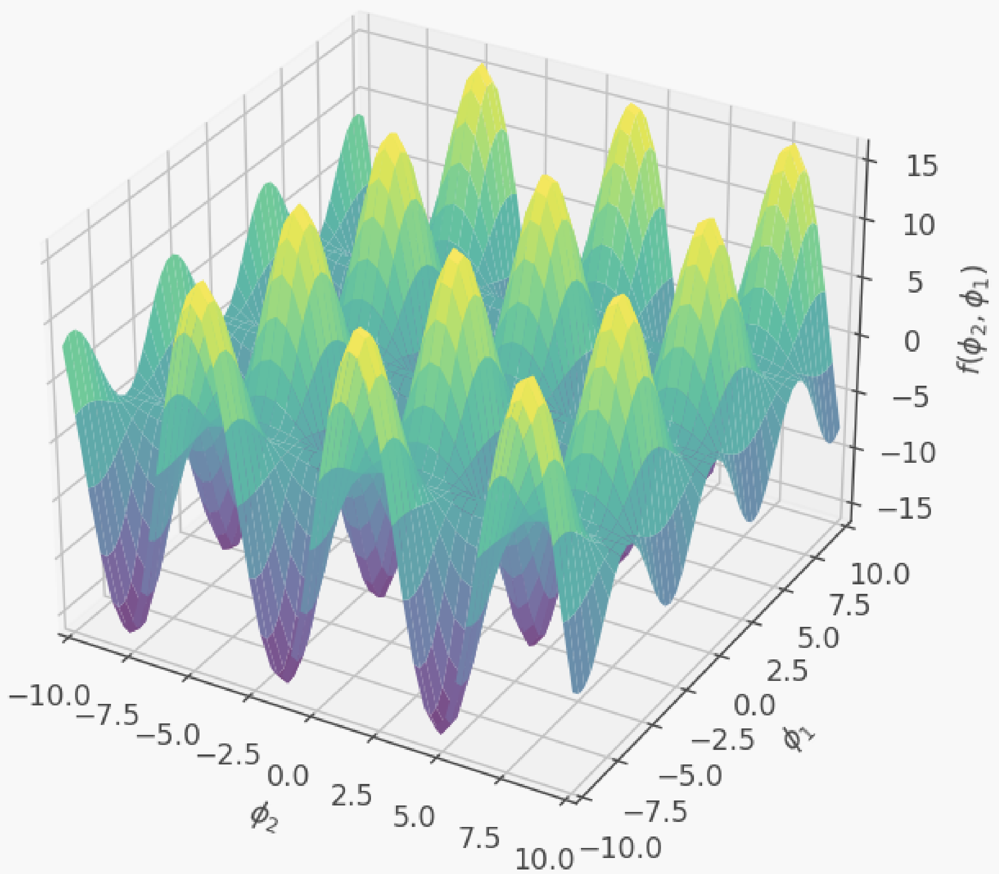
Plots

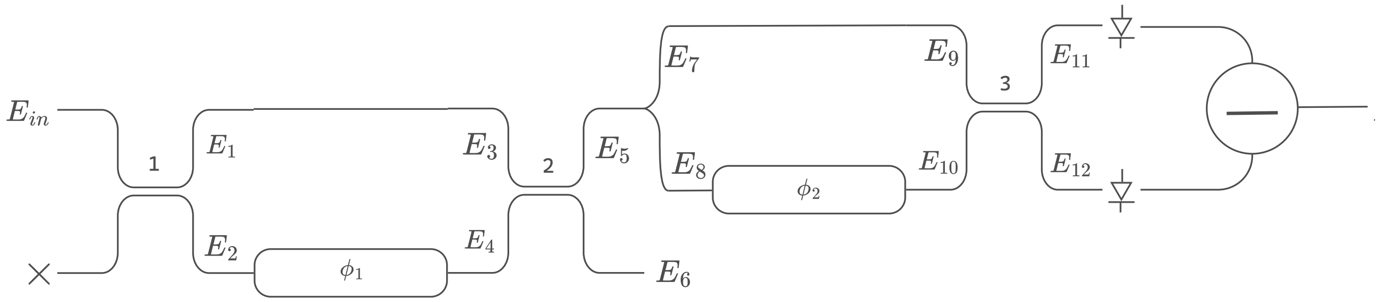


Intensity vs Phases Plot



Intensity vs Phases over a broad range of angles to show periodicity

Diagram



Modulating For Input

For initial directional coupler, input fields are E_{in} and 0.

The transfer matrix of directional coupler is giver as follows

$$TM = \begin{bmatrix} \sqrt{1-\alpha} & j\sqrt{\alpha} \\ j\sqrt{\alpha} & \sqrt{1-\alpha} \end{bmatrix} \tag{1}$$

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$$\begin{bmatrix} E_1 \\ E_2 \end{bmatrix} = \begin{bmatrix} \sqrt{1-\alpha} & j\sqrt{\alpha} \\ j\sqrt{\alpha} & \sqrt{1-\alpha} \end{bmatrix} \begin{bmatrix} E_{in} \\ 0 \end{bmatrix} \tag{2}$$

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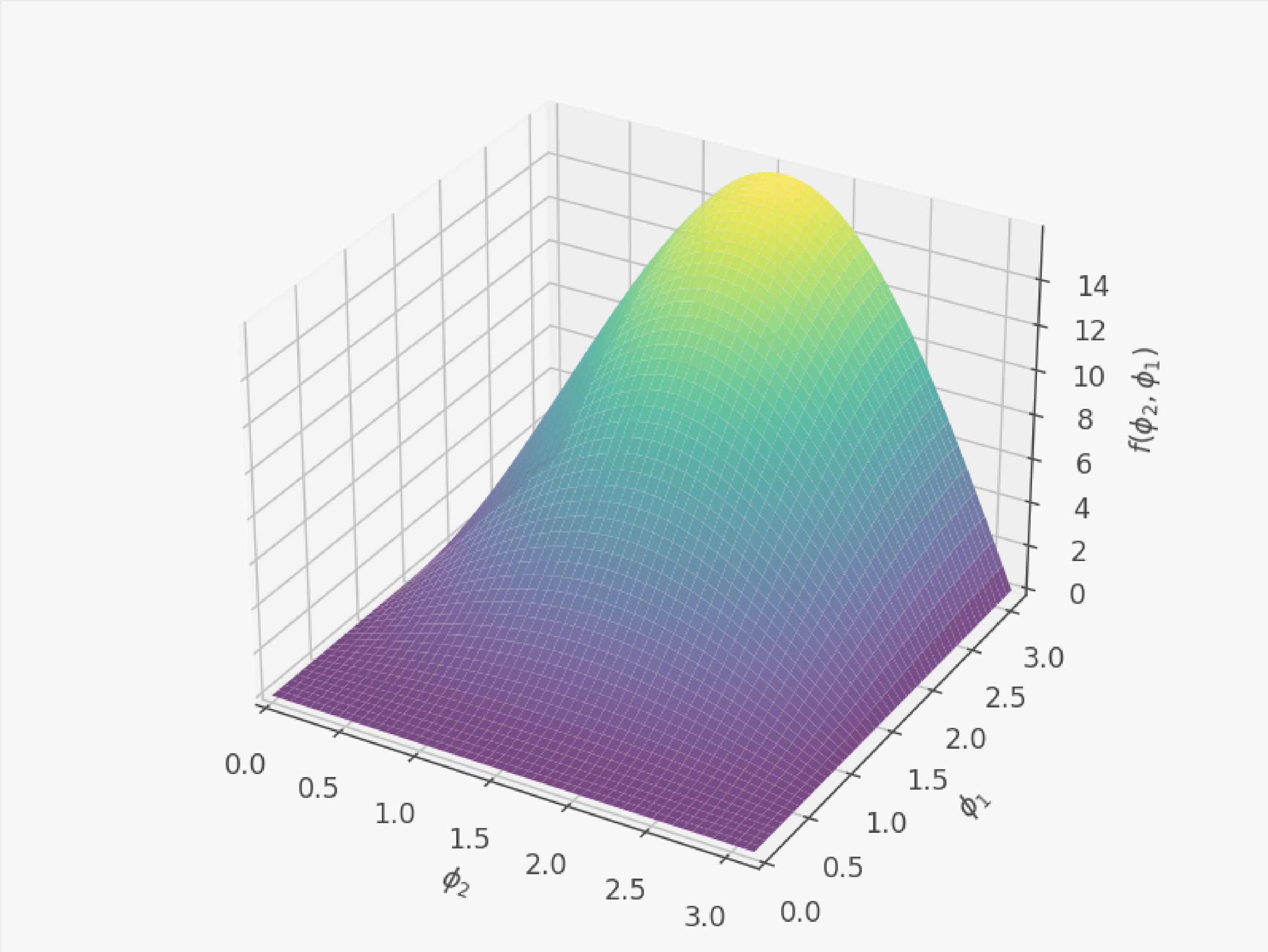

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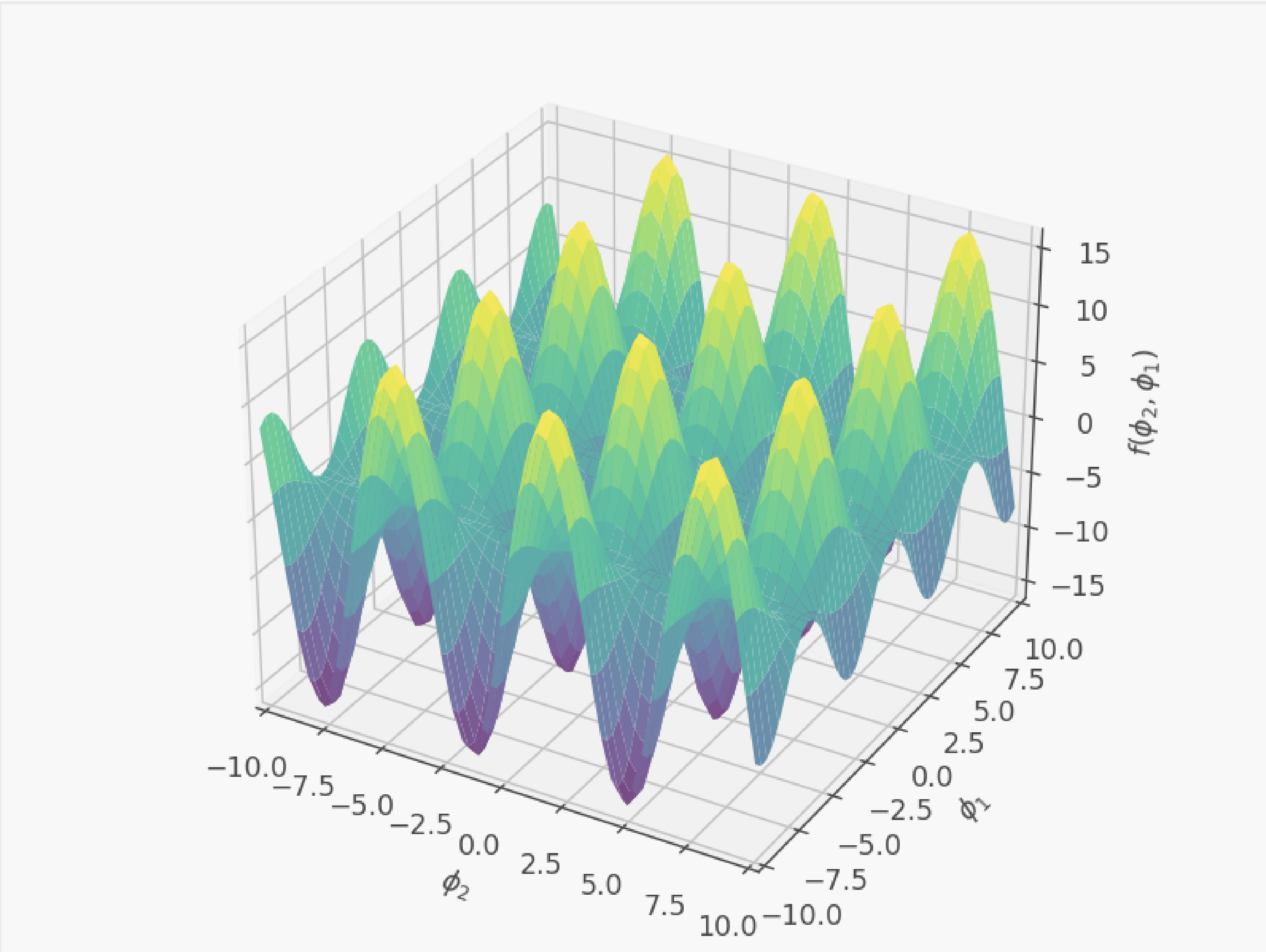

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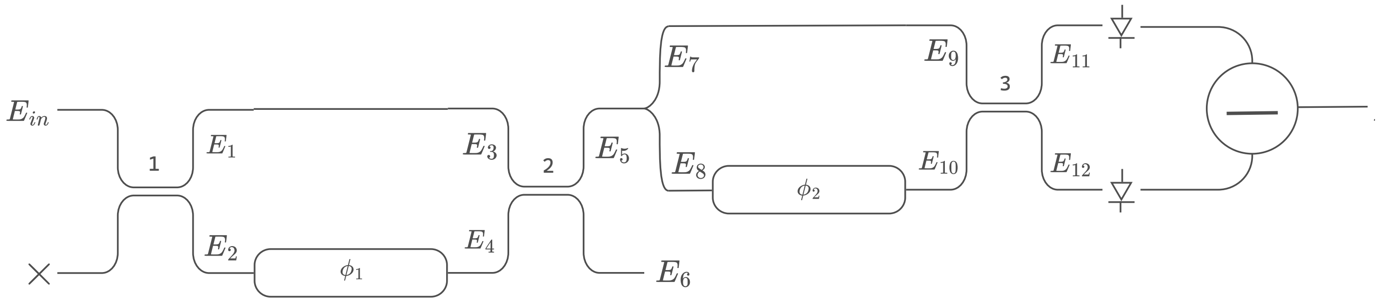

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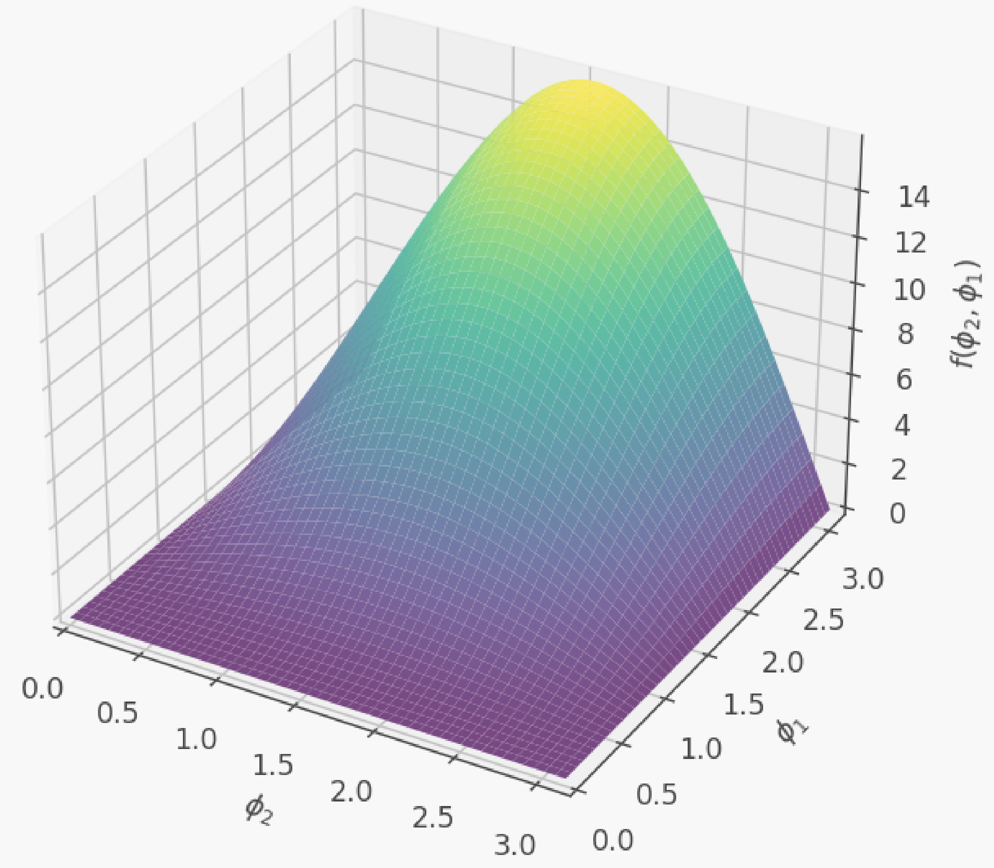

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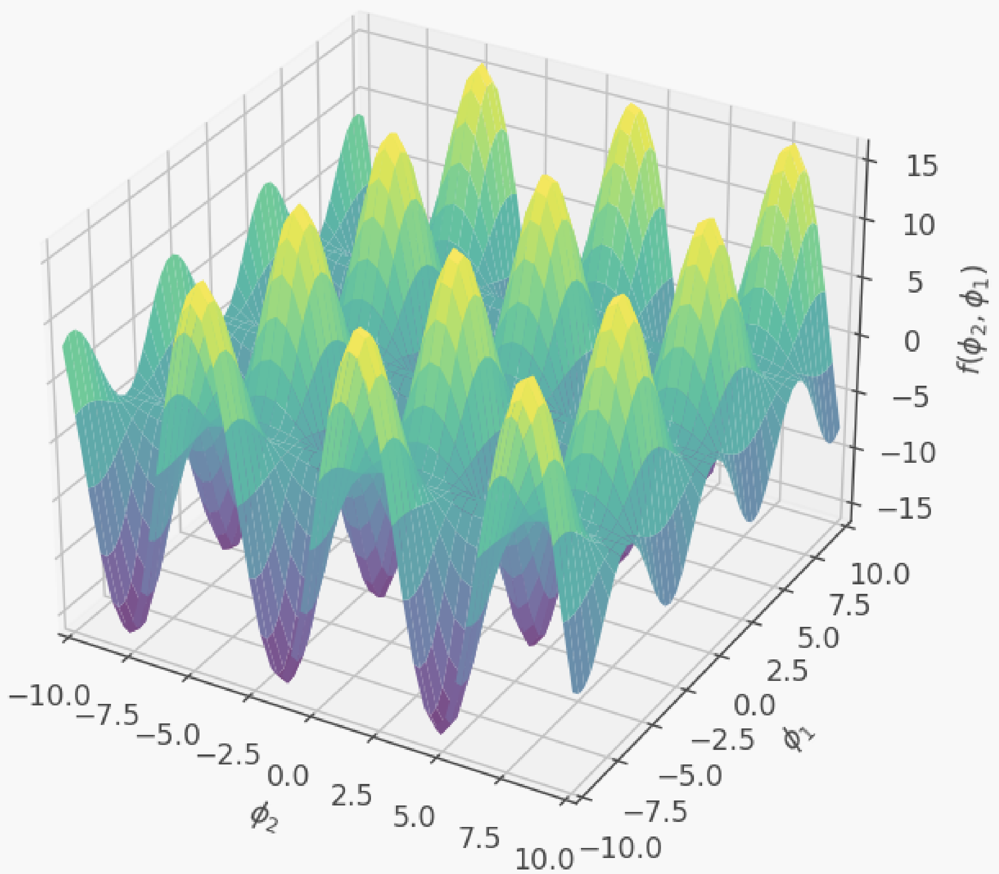

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