GATE

Lecture 15. The Lie group S((2,0) and its lie della sl(2,0).

4.4. The rolationestic spin group SL(2,6)

@ Set SL (2, C) = (ab) ad-bc=1

 $\begin{array}{c} & & & \\ & & \\ & & \\ & & \\ \end{array} \begin{array}{c} & & \\ & \\ \end{array} \begin{array}{c} & \\ & \\ \end{array} \begin{array}{c} & \\ & \\ \end{array} \begin{array}{c} \\ & \\ & \\ \end{array} \begin{array}{c} \\ & \\$

reutral elament (20)

invere: $\begin{pmatrix} a & b \end{pmatrix} = \text{fleo} \begin{pmatrix} d - b \\ -c & a \end{pmatrix}$

© Topological Spoce (SL(2, a), O).

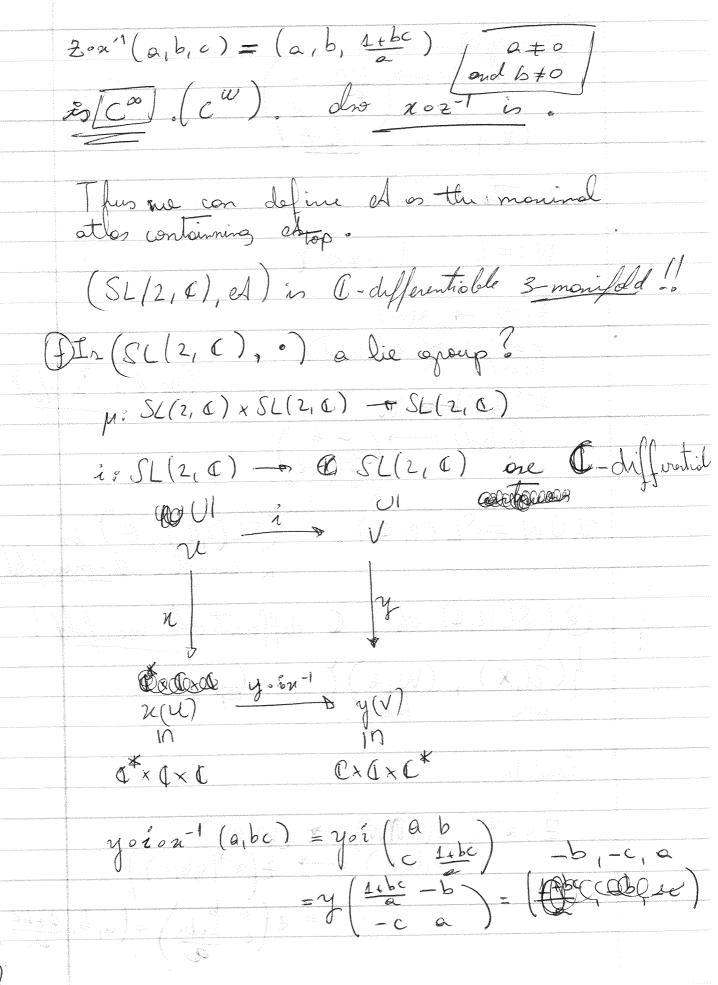
(c.1) defining a topology on C be mode by the open leals:

Br(2) = 4y ∈ C | 1y-z| < r.

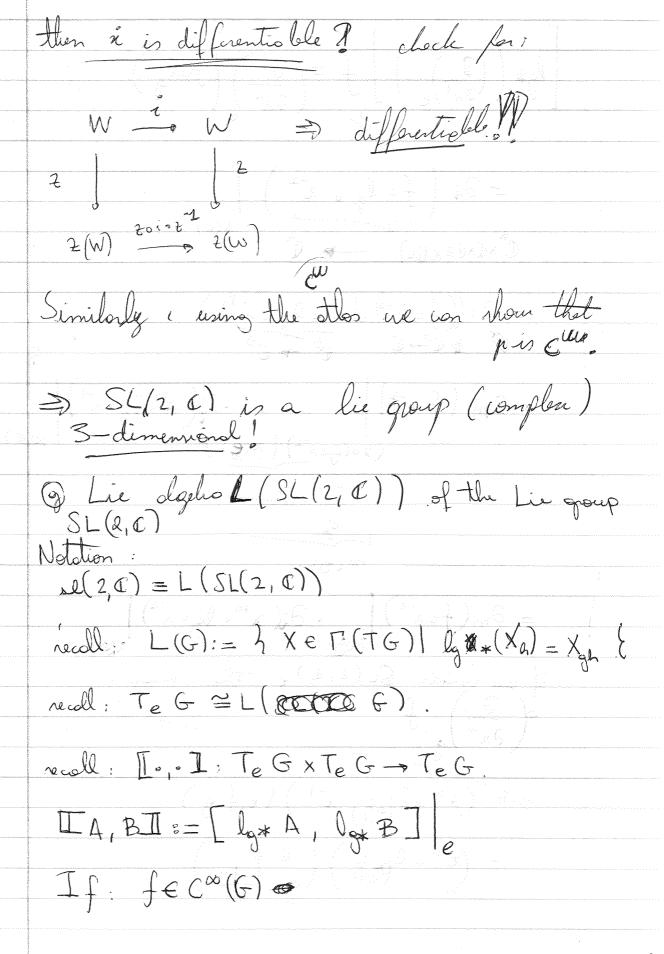
(C.2) : O C × C × · · · × C

$$\begin{array}{l} (3) \quad SL(2,\mathbb{C}) \subseteq \mathbb{C}^4 \\ \\ SL(2,\mathbb{C}) := \begin{array}{l} \mathbb{C}_4 \\ \\ SL(2,\mathbb{C}) \end{array} \end{array}$$

$$\begin{array}{l} (SL(2,\mathbb{C}), \ \mathcal{G}_{ab} | SL(2,\mathbb{C}) \end{array}) \xrightarrow{\text{topological space is}} \\ (3) \quad \text{Cluck soff that } \left(SL(2,\mathbb{C}), \ \mathcal{O} \right) \text{ is topological monifold.} \\ (4) \quad \text{Construct closts:} \\ (4) \quad \text$$



(4)



$$z^{m} \begin{pmatrix} ae + bg & * af + b + bfg \\ ce + dg & cf + d + fdg \end{pmatrix}$$

$$= \begin{pmatrix} ae + bg & * af + b + bfg \\ ae + bg & * ce + dg \end{pmatrix}^{m}.$$

$$\Rightarrow \partial i \left(z^{m} \cdot l_{(ab)} \cdot z^{-1} \right) \begin{vmatrix} a_{(1,0,0)} \\ a_{(1,0,0)} \end{vmatrix}$$

$$= \begin{pmatrix} a & 0 & b \\ -b & a & 0 \\ a^{-1}b & a & b \\ c & 0 & d \end{pmatrix} \begin{vmatrix} a_{(1,0,0)} \\ a^{-1}b & a & 0 \\ c & 0 & d \end{vmatrix} i$$

$$= \begin{pmatrix} a & 0 & b \\ -b & a & 0 \\ c & 0 & d \end{vmatrix} i$$

$$= \begin{pmatrix} a & 0 & b \\ bf & e^{2} & e \\ e & e \\ c & 0 & d \end{vmatrix} i$$

$$= \begin{pmatrix} a & 0 & b \\ bf & e^{2} & e \\ e & e \\ c & 0 & d \end{vmatrix} i$$

$$= \begin{pmatrix} a & 0 & b \\ a^{-1}b & a & b \\ a^{-1}b & a & 0 \\ a^{-1}b & a & 0 \\ c & 0 & d \end{vmatrix} i$$

$$= \begin{pmatrix} a & 0 & b \\ bf & a^{-1}b & a \\ a^{-1}b & a & b \\ a^{-1$$