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Vortragsauszüge

D.B.A. EPSTEIN: Foliations with all leaves compact

A foliation of a manifold M with all leaves compact is said to satisfy the stability criterion if for each leaf L and for each neighbourhood U of L, there is a neighbourhood V of L such that each leaf meeting V lies inside U.

Theorem 1 If M is a compact 3-manifold foliated by circles then the stability criterion is satisfied.

Counterexample There exists an example of an analytic foliation of a non-compact 3-manifold in which the stability criterion is not satisfied.

Conjecture If M is compact then the stability condition is satisfied (for all dimensions and codimensions).

Theorem 2 If M is connected & paracompact and G is a group of homeomorphisms such that the orbit of every point is finite then G is finite.

Theorem 3 If a foliation of M satisfies the stability criterion then we can describe the foliated structure of a neighbourhood of any given leaf L up to diffeomorphism as follows:
There exists a finite regular covering $\tilde{L} \longrightarrow L$ with G the group of covering translations and an embedding $G \subset O(\dim M - \dim L)$ and a neighbourhood N of L such that N is diffeomorphic to $\tilde{L} \times_G D^{\dim M - \dim L}$.

A. DOLD: Euler characteristic of symmetric powers and other functors of spaces or modules

Theorem. For symmetric powers and many other functors t of spaces we have:

$$\chi(Y_1) = \chi(Y_2) \Rightarrow \chi(tY_1) = \chi(tY_2) ,$$

where χ = Euler characteristic. Similarly for the characteristic polynomial (but not for the Lefschetz number!) of maps $f: Y \longrightarrow Z$. All of these are special cases of a theorem:

$$[Y_1] = [Y_2] \Rightarrow [tY_1] = [tY_2]$$

where Y_1, Y_2 are finitely generated projective R-modules, t is an essentially arbitrary (non-additive) functor between such, and [ ] denotes passage to K-theory.

M. KAROUBI: Quadratic forms and Bott periodicity

Let A be a ring with an antiinvolution σ and 2 inversible in A. If $\varepsilon = \pm 1$, a quadratic form on a right A-module M is given by a Z-bilinear map $\phi: M \times M \longrightarrow A$ with the usual identities. Define ${}_\varepsilon L(A)$ as the Grothendieck group of the category of projective moduls of finite type provided by a non-degenerate quadratic form and the "Witt group" ${}_\varepsilon W(A)$ = Coker $(K(A) \longrightarrow {}_\varepsilon L(A))$. Define again ${}_\varepsilon W^n(A)$ as ${}_\varepsilon W(S^n A)$ or ${}_\varepsilon W(\Omega^{-n} A)$ as appropriate $(n \in \mathbb{Z})$. Then we have the Bott periodicity theorem (in algebraic K-theory) ${}_\varepsilon W^n(A) \otimes \mathbb{Z}[\frac{1}{2}] \approx {}_{-\varepsilon}W^{n+2}(A) \otimes \mathbb{Z}[\frac{1}{2}]$. If A is regular noetherian ${}_\varepsilon W^n(A) = {}_{-\varepsilon}W^{n+2}(A)$ if $n \geqslant 0$. In particular ${}_\varepsilon W^n(A) = {}_\varepsilon W^{n+4}(A)$. $(n \geqslant 0)$

V. PUPPE: On convergence of spectral sequences in stable homotopy

Assumptions: Let $\ldots \longrightarrow X^2 \xrightarrow{f^2} X^1 \xrightarrow{f^1} X^0 = X$ be a sequence of spectra and morphisms in Boardman's stable category of CW-spectra $\mathcal{S}$, such that for a general homology theory $E_*(-)$, given by a spectrum E with finite skeletons, $E_*(f^n) = 0$ for all n, furthermore let $\{X^n, n \geqslant n_0\}$ be uniformly connected (i.e. $\exists\ i_0$ such that $\pi_i(X^n) = 0$ for $i \leqslant i_0$, $n \geqslant n_0$), $\pi_*(X^n)$

countable for all $n \geq n_o$ and A any finite dimensional spectrum.

Theorem: a) If $H_*(E;\mathbb{Q}) \neq 0$, then the spectral sequence that arises from the above sequence of spectra and morphisms by applying the functor $\{A, -\}_*$ ($\{- , -\}_*$ denotes morphisms in the graded homotopy category $\mathcal{S}_{h*}$) converges strongly to $\{A,X\}_*$ (in the sense of Cartan - Eilenberg).

b) If $H_*(E;\mathbb{Q}) = 0$, then $\bigcap_{r\geq 0}$ Im $(\{A,X^{n+r}\}_* \longrightarrow \{A,X^n\}_*)$ is divisable in $\{A,X^n\}_*$ by any product of primes that occur as order of elements in $H_*(E)$. This theorem can be applied to give the convergence of the Adams spectral sequence (using general homology or cohomology theories) in certain cases.

H.J. MUNKHOLM: Differential homological algebra

$\mathfrak{M}_U$ = category of DG-modules over the DGA algebra U over R.
A "resolution" of $M \in \mathfrak{M}_U$ is an $X \in \mathfrak{M}_U$ with subobjects $F_nX \in \mathfrak{M}_U$ s.t. $\ldots \supseteq F_nX \supseteq F_{n+1}X \supseteq \ldots \supseteq F_oX \supseteq F_1X = M$, satisfying

(i) $F_nX/F_{n+1}X \cong \bar{X}_n \otimes U$ for some free R-module X with differential = 0.

(ii) $x \in F_nX$, $dx = 0 \Rightarrow \exists y \in F_{n+1}X \cdot dy = x$.

"Resolutions" always exist, and there is a comparison theorem. If $N \in_U \mathfrak{M}$ then $H(X/M \otimes_U N) = \mathrm{Tor}_U(M,N)$, X a "resolution" of M, and the Eilenberg-Moore spectral sequence results from the filtration on $X/M \otimes_U N$. Advantages of this construction:

1. J.P. Mays "computation" of the differentials as matric Massey products becomes completely trivial.
2. Tor becomes a functor on a category which has (triples of) strongly hty. multiplicative maps as morphisms. This gives algebraic reason for the product on $\mathrm{Tor}_{C*B_o}(C*B, C*E_o)$.
3. There are reasons to hope that this map help to collapse E - M spectral sequences, e.g. for homogeneous spaces.

T. PETRIE: Smooth S^1-actions on homotopy complex projective spaces and related topics

We study the question: Which manifolds homotopy equivalent to CP^n admit smooth S^1-actions? We offer two conjectures

1. If $h: X \longrightarrow CP^n$ is a homotopy equivalence and if S^1 acts on X smoothly and non trivially then $h^*\hat{G}(CP^n) = \hat{G}(X)$ where $\hat{G}(X)$ is the cohomology class associated to the tangent bundle of X by the power series $\frac{x/2}{\sinh x/2}$.
2. Assume in addition that the fixed point set of the action consists of (n+1) isolated fixed points. Then $h^*\hat{G}(CP^n) = \hat{G}(X)$.

In the last case, we connect the conjecture with the eigenvalues of the S^1-action on the tangent space of X at the isolated fixed points. We associate to each fixed point p_i an integer a_i as follows: We show that h*(Hopf bundle) = $\bar{\eta}$ can be given an S^1-action making it an S^1-bundle over X, call it η. Then $\eta|p_i$ (the restriction to p_i) is a complex 1-dimensional representation of S^1 and is given by $t \longrightarrow t^{a_i}$, $t \in S^1$, $a_i \in \mathbb{Z}$. Let integers x_{ij}, $i = 0,1,\dots,n$, $j = 1,2,\dots,n$ be defined by the representation of S^1 on $TX|p_i$ by

$$t \longrightarrow \begin{pmatrix} t^{x_{i1}} & & \\ & \ddots & \\ & & t^{x_{in}} \end{pmatrix}. \text{ Then if } \Psi := \prod_{j\neq i}(1-t^{a_j-a_i}) \Big/ \prod_{j=1}^{n}(1-t^{x_{ij}}):$$

Theorem: a) $\Psi_i(t) \in \mathbb{Z}[t,t^{-1}]$ (b) $\Psi_i(1) = \pm 1$

These two conditions impose stringent restrictions on the eigenvalues $t^{x_{ij}}$ of the representation of S^1 on TX at isolated fixed points.

C.A. ROBINSON: Localizing simplicial groups

Let ℓ be a set of rational primes, ℓ' the complement of ℓ, and Z_ℓ the ring of rational with denominators divisible by no prime in ℓ. Let X be a 1-connected based CW complex. By a localization of X at ℓ one means a CW complex $Loc_\ell X$ and a map $X \longrightarrow Loc_\ell X$ which induces a homotopy homomorphism isomorphic to $\pi_* X \longrightarrow \pi_* X \otimes Z_\ell$. Localizations exist and are unique up to homotopy equivalence, by obstruction theory, but are not functorial in the category of spaces and maps.

We show that if one adopts Kan's method of studying simply connected homotopy theory using free simplicial groups, then one can make a functorial localization construction, as follows. By a $\mathfrak{D}_{\ell'}$-group we mean a group in which every element has a unique p'th root for each $p \in \ell'$. Given a free 0-reduced simplicial group Y, one applies to the group Y_n in each dimension the left adjoint functor to the inclusion of categories ($\mathfrak{D}_{\ell'}$-groups) $\subset$ (Groups). It is proved that this localizes homotopy groups at ℓ, and that the homotopy category of 1-connected based CW complexes is equivalent to the category of free simplicial $\mathfrak{D}_{\ell'}$-groups and loop homotopy classes of homomorphisms.

E. OSSA: Unitary Bordism of Abelian Groups

Satz: Sei G eine kompakte abelsche Liegruppe und $U_*^{(j)}(G)$ die Bordismusgruppe aller unitären G-Mannigfaltigkeiten, so daß jede Isotropiegruppe eine Codimension $\geqslant$ j hat.
Dann ist $U_*^{(j)}(G)$ ein freier U_*-Modul mit Erzeugenden in Dimensionen $\equiv$ j modulo 2.

D.W. KAHN: Stable Postnikov Systems, their Spectral Sequences, and Applications

We study the stable analogue of F. Peterson's spectral sequence in "Functional Cohomology Operations", Transactions Amer.Math. Soc. 1957. The entire exact couple is, in this case, made up of modules over the stable homotopy ring, and the algebraic

structure is considerably richer than the ordinary, unstable case.
As applications, we have new results on the question of when modules over the stable homotopy ring are infinitely generated. We connect the spectral sequence with the "Generating Hypothesis" of Freyd, and give new equivalent formulations of this hypothesis. This also leads to certain new results concerning the implications of the possible existence of stable phantom maps (counterexamples to the hypothesis).

D. ZAGIER: The Pontrjagin class of the orbit space of a finite group action

G a finite group; X a G-Mf (Mf $\equiv$ closed, orientable differentiable manifold); $L' \in H^*(X^g)$ = class appearing in the G-signature theorem (i.e. $L'[X^g] = \mathrm{Sign}(g,X)$);
$i_*: H^*(X^g) \to H^*(X)$ = Gysin homomorphism; $L(g,X) = i_*L'$;
$\pi: X \to X/G$ = projection map. Then X/G is a rhm (rhm = rational homology manifold), so has an L-class (Thom, Milnor).

Theorem: $$\pi^*L(X/G) = \Sigma_{g\in G} L(g,X) \qquad (1)$$

One can define $L(g,X)$ for X a rhm, and (1) still holds. If f is an automorphism of X (so f is G-equivariant and induces $\bar{f}: X/G \to X/G$), then (1) generalizes to

$$\pi^*L(\bar{f},X/G) = \Sigma_{g\in G} L(gf,X). \qquad (2)$$

With $X = P_n(\mathbb{C})$, $G = G_o \times\ldots\times G_n$ (G_i a finite subgroup of S^1, acts by multiplication of i^{th} coordinate), we deduce a formula of Bott for $L(X/G)$.
With $X = M^n$, $G = S_n$ (symmetric group), so $X/G = M(n) = n^{th}$ symmetric product of M (M a Mf, dim $M = 2s$), eq. (1) is applicable. Let $i: M(n) \to M(n+1)$ be the inclusion, and $\eta \in H^{2s}(M(n))$ the symmetrized lift of the generator of $H^{2s}(M)$. Then

$$i^*L(M(n+1)) = Q_s(\eta)\cdot L(M(n)), \qquad (3)$$

where Q_s is a power series only depending on s. For example, $Q_1(\eta) = \frac{\eta}{\tanh\,\eta}$.

K.H. MAYER: Group actions and equivariant line bundles

Atiyah und Hirzebruch bewiesen, daß für jede Spin-Mannigfaltigkeit mit nicht-trivialer S^1-Aktion das $\hat{A}$-Geschlecht verschwindet. Mit der gleichen Methode wird gezeigt, daß für jede kompakte orientierte differenzierbare Mannigfaltigkeit X mit nicht-trivialer S^1-Aktion, auf der ein äquivariantes komplexes Geradenbündel ξ existiert mit $c_1(\xi) \equiv w_2(X) \bmod 2$, gilt: $e^{c_1/2}\,\hat{G}(X)[X] = 0$, wenn die Rotationszahlen von ξ nicht "zu groß" sind. Diese Tatsache wird benutzt, um eine Invariante für eine spezielle Klasse von freien S^1-Aktionen zu definieren. Z.B. klassifiziert diese Invariante die freien S^1-Aktionen auf den 7-dimensionalen Homotopiesphären.

H.A. HAMM: A theorem of the Lefschetz type

Es handelt sich um den folgenden Satz von Lê Dũng Tráng und mir: Sei U eine Umgebung von 0 in $\mathbb{C}^m$, Y und H zwei analytische Teilmengen von U mit $H \subset Y$, $Y - H$ sei regulär. Ist $\rho > 0$ genügend klein und $B_\rho = \{z \in \mathbb{C}^m \mid \|z\| \leq \rho\}$, dann gilt: Für jeden hinreichend allgemein gewählten k-dimensionalen linearen bzw. affinen Teilraum L von $\mathbb{C}^m$ ist das Raumpaar $(Y \cap B_\rho - H, L \cap Y \cap B_\rho - H)$ (k-1)-fach bzw. k-fach zusammenhängend.
Vgl. unsere Ankündigung eines spezielleren Resultats in den Comptes Rendus, t. 272, p. 946-949. Der Beweis benutzt Morsetheorie und Stratifikationen.

D. ERLE: Unitary and symplectic knot manifolds

Knot manifolds are certain smooth O(n)-, U(n)-, or Sp(n)-manifolds with three orbit types (W.C. Hsiang, W.Y. Hsiang, K. Jänich). For a knot manifold M, the orbit triple is the triple $(M', \partial M', F)$ where M' is the orbit space (which is a manifold with boundary $\partial M'$) and $F \subset \partial M'$ is the image of the fixed point set in M'.

<u>Theorem:</u> A triple (M',∂M',F) is the orbit triple of a knot manifold with trivial principal orbit bundle if F has codimension 2, 3, or 5 in ∂M' in the orthogonal, unitary, or symplectic case, respectively, and bounds a framed manifold in ∂M'.

This means that for M' a disk, in the unitary and symplectic case not all knots are "orbit knots" (as opposed to the orthogonal case). A wide class of orthogonal knot manifolds is classified by the orbit triple.

<u>Theorem:</u> There are non-diffeomorphic unitary and symplectic knot manifolds with orbit space a disk, having the same orbit triple.

G. WOLFF: <u>A relation between K* and U*</u>

Consider the Conner-Floyd transformation $\mu: U^* \longrightarrow K^*$ of $\mathbb{Z}_2$-graded cohomology theories on the category of finite CW-pairs. Let I denote the kernel of the ringhomomorphism $\mu(\text{point}): U^*(\text{point}) \longrightarrow K^*(\text{point})$. Then the Conner-Floyd theorem states that μ induces a natural equivalence $U^*/I\cdot U^* \cong K^*$.

This can be generalized in the following way:

> For each q = 0,1,2,... the functor $I^q.U^*$ is a $\mathbb{Z}_2$-graded cohomology functor and there is a natural equivalence
>
> $$\frac{I^q}{I^{q+1}} \underset{\mathbb{Z}}{\otimes} K^* \cong \frac{I^q.U^*}{I^{q+1}.U^*}$$
>
> of $\mathbb{Z}_2$-graded cohomology theories.

R.L.E. SCHWARZENBERGER: <u>Topology of Crystal Lattices</u>

The work of Robertson (Topology, 1970) can be combined with old results of Frankenheim (1842) and Bravais (1850) in mathematical crystallography to obtain topological information about a compact $(\frac{1}{2}n(n+1)-1)$-dimensional complex L_n which parametrises n-dimensional lattices $T = \{\sum_{i=1}^{n} r_i e_i ;\ r_i \text{ integers}\}$ up to orthogonal equivalence in the following sense: $T_1 \sim T_2$ if there exists a real number $c \neq 0$ and an orthogonal map φ such that $\varphi(T_2) = c\,T_1$. Applications when $n = 3$ to crystallography include: (i) L_3 has the homotopy type of a 5-dimensional sphere, (ii) the subset of lattices of dimension < 3 is a 2-simplex, (iii) the subset of monoclinic lattices is a contractible 3-complex, (iv) the subset of orthorhombic lattices is a cross-cap, (v) the subset of hexagonal lattices and the subset of tetragonal lattices are both circles.

L.M. WOODWARD: Radon-Hurwitz Theory of Vector Bundles

Let $\alpha = 1 \oplus \beta$ be a real orthogonal k-plane bundle over a finite complex B and let $\xi = \alpha \oplus \gamma$ be of dimension n. Let $O_{\xi,\alpha}$ denote the subbundle of $\mathrm{Hom}(\alpha,\xi)$ consisting of local orthogonal monomorphism. Then the inclusion $1 \hookrightarrow \alpha$ of the trivial line bundle gives rise to map $p: O_{\xi,\alpha} \longrightarrow O_{\xi,1}$. This is the projection map of a fibre bundle and a section of this bundle is called an A_α-structure on ξ. Let $\pi: P_\alpha \longrightarrow B$ be the projective space bundle associated to α. Then the inclusion $1 \hookrightarrow \alpha$ defines a map $B \xrightarrow{\sigma} P_\alpha$ which is a section of P_α. Let P_α/B be the cofibre of σ. Then a homomorphism $T_\alpha: KO(B) \longrightarrow \widetilde{KO}(P_\alpha/B)$ is defined by $T_\alpha\, x = \pi^* x \otimes \lambda - \pi^* x$, where λ is the class of the Hopf line bundle over P_α. Then we have the following:
Theorem. An element $x \in \widetilde{KO}(B)$ has a representative bundle ξ which admits A_α-structure if and only if $JT_\alpha[\xi] = 0$ in $J(P_\alpha/B)$, where $J: \widetilde{KO}(P_\alpha/B) \longrightarrow J(P_\alpha/B)$ is the standard J-homomorphism.

T. t. DIECK: Fixed point structure of periodic maps

We consider differentiable maps of prime power period on closed unitary manifolds and show that K-theory characteristic numbers determine the equivariant bordism class of such manifolds.

Moreover we show that the Atiyah-Singer invariants for fixed point free actions determine the equivariant bordism class if we consider bordisms without fixed points. As an application we determine which systems of tangential G-modules at isolated fixed points can occur on a unitary G-manifold with only isolated fixed points ($G = \mathbb{Z}_q$). We also give lower bounds for the dimension of the fixed point set of a unitary G-manifold M which is indecomposable in U_*/pU_* (where U_* is the unitary bordism ring).

A. VERONA: Homological properties of abstract prestratifications

We shall prove the following assertions:

1) Let $\{A,S,T\}$ be an abstract prestratification such that
   - A is a compact space
   - Any stratum of S is orientable and odd-dimensional.

   Then: $\chi(A) = 0$ (χ denotes the Euler-Poincaré charcteristic).
2) Let $\{A,S,T\}$ be an abstract prestratification with orientable strata, of even dimension. Then, for any $a \in A$, $\chi(A,A \setminus \{a\}) = 1$.
3) Let $\{A,S,T\}$ be an abstract prestratification with orientable strata, of odd dimension. Then, for any $a \in A$, $\chi(A,A \setminus \{a\}) \equiv 1 \pmod 2$.
4) Let $\{A,S,T\}$ be an abstract prestratification, with orientable strata. If A is compact and dim A = n, then

$$H_r(A,\Sigma A;Z) \cong H^{n-r}(A \setminus \Sigma A;Z) .$$

J. BECK: Left derived functors and H-spaces

I proved the equivalence of the homotopy theories of infinitely homotopy-associative H-spaces and topological monoids, and mentioned other examples including orbit spaces, categories of group actions, and homotopy-everything spaces. The main tool is a new construction of the topological left derived of a left adjoint functor between algebraic categories / Top. This construction is probably easier to manipulate, for it is free-er, than the usual makeshifts such as $G\bar{W}(\Gamma) \longrightarrow \Gamma$ on the category of simplicial groups. The homology of the left derived of the group completion of a topological monoid can be calculated by completing the Hopf algebra to a Hopf algebra with antipode.

R. VOGT: On homotopy limits

Graeme Segal introduced the notion of a homotopy colimit of a commutative diagram of topological spaces. Examples of homotopy colimits are the mapping cylinder, mapping cone, suspension, mapping torus etc. We extend this definition to diagrams which commute up to koherent homotopies and introduce the category of such diagrams whose morphisms are homomorphisms of diagrams up to koherent homotopies. The homotopy colimit functor is then left adjoint to the inclusion of the homotopy category as constant diagrams into the diagram category. Dually, we construct the homotopy limit functor as right adjoint to this inclusion functor. Finally we prove some statements about the homotopy type of homotopy limits and generalize a theorem of Milnor.

R. FRITSCH: Kan Condition and Degeneracies

Let X be a simplicial set. If X satisfies the Kan condition, then X allows degeneracies (this has been proved by Kan and Rourke-Sanderson using the geometric realization and a simplicial approximation theorem, a purely combinatorial proof is indicated here), unique up to semisimplicial homotopy equivalence. If X allows degeneracies such that the result can be a finite dimensional semisimplicial set, then the degeneracies are unique. Conjecture: the degeneracies for the singular simplicial set of a topological space are unique up to semisimplicial isomorphism. If X allows various degeneracies then the resulting semisimplicial sets have the same weak homotopy type.

E. VOGT: Stable foliations of 4-manifolds by surfaces

A foliation of a manifold is called stable if every neighbourhood of every leaf contains a saturated (or invariant) neighbourhood. Let us call a stable foliation of a closed 4-manifold M a Seifert fibration of M if all leaves are closed 2-manifolds and if every element of the holonomy group of any leaf is the germ of an orientation preserving diffeomorphism. We describe a class of manifolds with Seifert fibrations which can be characterized as follows: the Euler characteristic of any leaf is greater than the Euler characteristic of the base space minus a positive number determining the complicacy of the foliation. Such spaces we call admissible Seifert fibre spaces:

Theorem: Let M and M' be admissible Seifert fibre spaces. Then the following conditions are equivalent

(a) M and M' are homeomorphic by a homeomorphism preserving the foliation

(b) M and M' are homeomorphic

(c) $\pi_1(M) \cong \pi_1(M')$

D. ARLT: On highly connected bounded manifolds

Let M be a closed oriented C^∞-manifold of dim 4k-1, $k \neq 1,2,4$. Furthermore assume M to be (2k-2)-connected, and let M be a π-manifold. Using the diffeomorphy-classification for $M - \mathring{D} = M_0$ given by Wall, $\pi_0(\mathrm{Diff}(M))$ and the operation of the homotopy spheres on M by connected sum are discussed.

Let $q(M)$ be the quadratic form on $H_{2k-1}(M)$, as defined by Wall, $O(q)$ the group of isometries of q. Further assume that $H_{2k-1}(M)$ is a 2-group. One has then the obvious map $\varphi: \pi_o(\mathrm{Diff}(M)) \longrightarrow O(q(M))$ and by inserting into a fixed disc a map $i: \Gamma_{4k} \longrightarrow \pi_o(\mathrm{Diff}(M))$. The first theorem says then: The sequence

$$0 \longrightarrow \Gamma_{4k} \xrightarrow{i} \pi_o(\mathrm{Diff}(M)) \longrightarrow O(q) \longrightarrow 0 \text{ is exact.}$$

Secondly it can be proved that if M is a manifold as above, Σ a homotopy sphere of dim $4k-1$, and $M \# \Sigma \cong M$, then $\Sigma = S^{4k-1}$. In the proof a suitable generating set for $O(q)$ is described, which consists of symmetries and some extra maps.

W. END: Operationen für Charakterringe

Sei R_p der komplexe Charakterring aufgefaßt als kontr. Funktor von der Kategorie der endlichen P-Gruppen in die Kategorie der Ringe. Wir bestimmen den Ring $A(R_p,R_p)$ der additiven und das Monoid $Ri(R_p,R_p)$ der ringhomomorphen natürlichen Transformationen:

Ergebnis: $A(R_p,R_p) \cong \mathbb{Z}[X]_p^{\wedge}$, $Ri(R_p,R_p) \cong (\mathbb{Z}_p^{\wedge}, \circ)$

$\mathbb{Z}[X]_p^{\wedge}$ ist die Monoidalgebra von $X = (\mathbb{N}, \circ)$ komplettiert nach gewissen Idealen; $\mathbb{Z}^{\wedge}$ ist die Vervollständigung von $\mathbb{Z}$ nach den Idealen $n\mathbb{Z}$; n/p. Analoge Resultate erhält man für andere Charakterringe.

Der Vortrag ist mehr algebraisch und nicht so sehr topologisch. Er knüpft etwas an tom Diecks Arbeit: "Kohomologie-Operationen in der K-Theorie" an.

G. Wassermann (Regensburg)